# The Builder.

VOL. XL. No. 1997. SATURDAY, MAY 14, 1881.


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### *The Newly-Opened Pyramids.*

FIVE THOUSAND years ago there was a busy scene on the banks of the Sacred Nile near to the holy city of Memphis. Men were hurrying to and fro with stones and building materials, and on the broad river were the great barges and floats which bore the stone hewn in the distant quarries to construct the pyramid or last resting-place of the newly-crowned Pharaoh, Merira Pepi. By that strange mingling of present and future,—that union of life and death which was ever before the ancient Egyptian, be he god-like Pharaoh or the poor peasant, — the great work of life was the preparation of the abode of death. Simultaneously, as the costly fabric of the palace rose above the walls of the holy city of Men-nefer "the good-land," there rose above the tombs in the land of the departed,—"the good abode" or resting-place of the king when life was o'er. Pepi, the third monarch of the Sixth of Egypt's dynasties, ascended the throne of Egypt 3,230 years before the Christian era; and no sooner had the decree gone forth that he was king, than there was issued also the order to begin the life-work of the erection of the royal tomb. For more than five centuries has that tomb and pyramid withstood the ravages of time, and now the spade of the explorer has removed the thick cloak of sand and *débris* which covered its entrance, and the walls and corridors are found covered with texts, which will reveal to us the pious prayers to be offered to the gods for the spirit of the departed king. Side by side with the tomb of this monarch rose that of his son, Merenra, or Horemsaf, and this house of death which bore the name of the Kha-nefer, or "fair arising," has guarded more zealously the treasure committed to its keeping thousands of years ago. The spoiler had entered the house of the departed, and stripped the bodies of the jewels, and the talismanic ornaments. The sarcophagus of Pepi was empty, but that of the son still contained the body which, so many years ago, was assigned to its keeping. By the discovery of these early pyramids in the grave land of Sakkara, M. Mariette has bequeathed to the students of the history and science he loved so well, a rich legacy, and all those who have laboured in the perils of archæological research must understand the feeling of sadness with which the dying Egyptologist received the news of this new discovery which promised so rich results, but the further prosecution of which was denied him,—"It is worth the Serapeum; but shall I ever see these new pyramids?" He never saw them; but the merit of their discovery will ever be his. In the same region, the most ancient cemetery in the world, and near to the resting-place of the Apis bulls, the discovery of which was his greatest work in the exploration of Egypt, are the two pyramid tombs of Pepi and his son, which come to us as his legacy.

The monuments thus restored to us do not come unaccompanied by records of those who made them. The story of those pyramids carries us back far into the early days of Egypt's history, but they, nevertheless, appear to us with many attendants. The friends and counsellors of dead kings, the generals of their armies, and, more important still, the builders and architects of these ancient resting-places, and the sculptors of the royal records are all persons whose names and deeds are written in indelible characters on the historic records of the Nile lands, and, with them as guides, we shall soon learn the history of the tombs of Pepi and his son.

Intimately associated with the two Pharaohs buried here in the fields of Sakkárah, was an official named Una. He had been an official of the court under the predecessor of Pepi, Pharaoh Teta, where he held the post of "superintendent of the storehouse and registerer of the docks." From this we may conclude that he held some post over the granaries and corn-stores, and was in charge of the navigation of the Nile and the quays of Memphis. This young official was chosen by the new Pharaoh to carry out the task of bringing from the quarries the sarcophagus and other furniture of the royal tomb. In his funereal tablet, now in the museum at Boulaq, Cairo, he states that he was "commanded by the majesty of the divine lord," and he brought a white stone sarcophagus from the land of Tourau; that is, from the quarries at Tourah in the Monkattam range. The stone here is a fine-grained nummulitic limestone of the old tertiary formation. It was from these quarries that all the stone composing the core of the pyramids was obtained, the granite casing coming from higher up the Nile, from Elephantine. The expedition under Una reached the quarry, and thence there were brought on great boats or rafts, "a sarcophagus with its cover, a door and two jambs, and a pedestal," or altar for burning incense. After the success of this expedition the faithful Una was appointed "chief of the coffer of his majesty," and had also the title of "Companion," "Scribe," and "Priest of the Pyramid," of the king. During his visit to the quarries at Tauiua, the royal clerk of works was brought in contact with another important official, namely, Meri-ra-ankh, "the prefect of the district of the quarries." The tomb of this official is near to the pyramid of Pepi, and from it we learn the office which he held during life-time. When in the land of the living, we may conclude that both Una and Meri-ra-ankh were subject to a higher official, who bore the title of "Chief or Superintendent of Public Works," and we may suppose that M. Meri-patah-ankh, "Ministre des Travaux Publiques" to his Majesty Pharaoh Pepi, saw that the construction of the resting-place was carried out in a proper and workman-like manner. We are sure that few buildings have stood so severe a test of time, and an edifice that can withstand the ravages of five thousand years must indeed be regarded as a credit to both builder and architect. The work which Una had carried out so well under the reign of Pepi so increased his fame, that on the accession of Merenra or Horemsaf, he received the commission to carry out the necessary works for the construction of the pyramid of Cha-nefer, the "fair arising," which was designed to be the resting-place of the king when he passed away. "His Majesty sent me to Abhat (Elephantine), to bring for the living Lord the sarcophagus of the living, with its cover and a pyramidon,—a statue for the pyramid Kha-nefer, of the king Merenra, the divine ruler, "His Majesty sent me to bring a granite doorway, a sill, granite doors, and lintels," &c., for the pyramid.

To transport these great blocks from Elephantine and the Upper Nile to Memphis a large flotilla of boats and barges was constructed. This fleet consisted of six broad boats, three tow-boats, and six rafts. Having successfully accomplished his task, the successful courtier concludes his inscription by stating that he was "the beloved of the father" of the king, "the praised of his mother, the Princess Meri-ra Ankh-nes," the Chief, the Governor of the South, and the beloved of Osiris. These are, indeed, high titles, and show how great was the profession which Una followed.

How high and noble a position that of architect was during these early Egyptian dynasties is shown by the fact of the number of names of these officials that are preserved to us. We find that princes of the royal blood adopted the profession, and that successful members of the profession were allied with ladies of the royal house. One of the finest, if not the most beautiful, of the tombs of Egypt is that of the architect Ti, which is situated in the necropolis at Sakkarah, and forms an attraction to all tourists. Like Una, Ti, who flourished during the fifth dynasty, rose rapidly to high offices in the State, and married Nefer-hotep, a woman of the royal household.

How doubly interesting do these newly-opened pyramids now become, connected thus with so many persons whose names are graven on the page of history. Next to these civil officials attached to the tomb of a dead Pharaoh was an important religious functionary, namely, the "Guardian or Prophet" of the tomb. His duty was to offer incense to the memory, and to ever repeat the titles and praises, of the dead. The inscriptions have preserved to us the name of the ancient Egyptian priest who was guardian of these two tombs, his name being Pepi-na.

So these buried treasures of Egypt's kings are no strangers, after all; for their masters, occupants, builders, and architects, and the pious guardians of their contents, are familiar to us, and with them as sponsors we may welcome them as the forerunners of more and brighter discoveries. The pyramids are the small ones marked Nos. 1 and 2 on the plans of Col. Vyse, and, though known to Egyptologists, the entrance had not been discovered until shortly before the death of Mariette Pasha. It is to be hoped that this archæological bequest which he has left may receive its well-merited treatment at the hands of the Khedive, and that the inscriptions, drawings, and plans may soon be made accessible to those who anxiously await them.

## FURTHER NOTES AT THE ROYAL ACADEMY.

HAVING selected in our last notice works which seemed to us of most prominent interest, we will continue our remarks on the best of the other pictures taken in the order of hanging. Gallery I. contains Mr. Frith's most important work of the year, "For Better, for Worse" (14), a contrast between the circumstances of a "wedding in high life," as the newspapers phrase it, and the sadder aspect of married life in circumstances of poverty and distress. This at least is the real *morale* of the painting, though the canvas is mainly occupied with the glitter and show of the outwardly prosperous wedding which has just taken place; the bride and bridegroom are proceeding to the carriage amid the good wishes of a crowd of friends and relatives collected on the house-steps and in the balcony above, while among the lookers on, but rather separated from the main group, are a poor couple who have long ago entered on the holy state, only to struggle with poverty and distress with their evidently half-starved offspring. Street boys, with no special cares, also look on the show, as a sort of passing amusement. Such a scene can never be without its significance as a reflection of the sharp contrasts of life; it would have been more interesting as a whole if the wealthy section of the personages had been themselves rather less commonplace and shown more marked character. As it is, the character and the human interest may be said to lie mainly in the sadder portion of the groups; perhaps some may think it is not on that account the less true to the general realities of life. In the same gallery Sir F. Leighton's picture of "Elisha raising the son of the Shunamite" finds many admirers. The beauty of the work lies in the sweet and very affecting figure of the dead child, with his boyish face beautiful in death; the figure of the prophet, very finely drawn, is stretched out half kneeling on the bed and looking into the face of the dead child, according to the Scripture narrative; the contrast between his earnest face and attitude and the passive look of the dead child is finely given, and the work grows upon one more on further acquaintance than at first sight. Mr. Logsdail, who has been noticed recently for able paintings of bits of old building, exhibits a larger study of this kind than we have before seen from him in his "St. Anne's Almshouses, Antwerp." The scene is in the courtyard of the almshouses; their quaint but simple architecture is rendered with minute truthfulness, which is carried out in all the minor details of the scene; and the figures, though they tell no story, are good in themselves and fall in well with the whole scene. Mr. Oakes's "Gorse-cutting" (13) is not the bare style of landscape which its title would suggest, but a wild mountainous scene with a broken foreground, effective in a sense, but very mannered, a remark which applies still more strongly to his other landscape, "The Miller's Boat," in Gallery II. Both contain well-worn receipts for effect in the shape of high lights on certain points in the distance and middle distance, which seem put in for effect and sparkle, and do not suggest really truthful transcript from nature. This seems to be too much the characteristic of this artist's pictures whenever he departs from those more simple elements of the picturesque, in the shape of barren moor or sand-hill scenery, for the realisation of which he has shown in other works a special aptitude. His more ambitious works look like picture-making. Mr. Cecil Lawson's "The Pool" is an effective sketch on a large scale, which would impress us more if a comparison of it with his larger work in Gallery III., "Barden Moors," did not go to show, what we fear must be the conclusion from his landscapes generally, that he has really no style belonging to himself; he is a happy imitator of others' styles. "Barden Moors" is really an imitation of De Köning, whether consciously or unconsciously, and has the unreal character belonging to all imitations. Mr. Tom Lloyd's "Milk for the Calves" belongs to the class of works which have been not unhappily termed "foreground landscapes," and of which there are so many examples at present. It is an exceptionally good one of its class: the scene is on a high down with long grass and straggling plantation, overlooking the sea; the calves, which animals Mr. Lloyd has taken under his especial protection, are admirably painted, and there is a general open-air freshness about the scene. Mr. Peter Graham's "Mountain Road," is, alas! theatrical in its strong glints of light and rather harsh and unpleasant greens,—characteristics which reappear in all his works this year, and make one regret to find a painter who once promised original genius and force in the treatment of landscape, taking up so unmistakably with the repetition of a receipt, striking when new, but losing its effect on us with each repetition. M. Fantin's portrait of "Mdlle. L. R.," executed in his usual clear forcible downright style, without background or accessories of any kind, is a point to be noted in this gallery.

In Gallery II. are several works exhibiting the best qualities of their respective artists. Mr. H. W. B. Davis, one of the few painters who combines animal painting with landscape painting with equal success in both elements, is quite at his best in "Mother and Son" (137), a white mare and her foal standing in a breezy, sunshiny landscape near the sea; the mare has her mane blown half over her head in the way which gives to horses when at large in a landscape such a peculiarly picturesque effect. The grouping of the two animals, the forcible way in which the white one stands out in the bright sunshine, and the clear freshness of the landscape and the distant sea, combine to make a most pleasing and effective work. Mr. Albert Goodwin's delicately-painted mountain landscape, "A Sermon in the Hayfields, Simplon," should have been hung lower; it exhibits the best qualities of its author, whose landscape art, like that of some other even more eminent landscape-painters, does not fit into the ideas about landscape-painting which are accepted by the Royal Academy. Now that Mr. Brett has accepted Associate-ship of the Academy (that is the true way to put it), one may suggest that he might endeavour to get more justice done to some other eminent artists whose treatment in the Academy is the subject of annual comment. Mr. Mark's "Episcopal Visitation" is one of his pictures of bird-humour; a bishop at the Zoological Gardens is inspecting some long-billed birds, who look a great deal more solemn than himself, though with a certain similarity of expression. Mr. Staniland's "Relief of Leyden" (90) is a work of some importance, illustrating a scene from Motley's "History of the Dutch Republics," when a procession was formed to the church, headed by the Admiral who relieved the besieged and half-starved town. The admiral, a fine specimen of the old Dutch seaman, is followed by a crowd of people, who are divided between desire to do honour to the occasion and the ravenous claims of hunger, which they are satisfying as they walk along, from the "loaves and fishes" handed to them by the Admiral's party. There is a great deal of spirit, reality, and movement in the scene, which is effectively grouped, without appearing to be consciously managed. Mr. Pettie's "Her Grace," is, of course, a companion to "His Grace," in last year's exhibition, but hardly so good, and there is not sufficient look of high lineage about the figure. Mr. Crofts has not been in earnest in his "George II. at the Battle of Dettingen," which is a manifest falling off from previous achievements. Among the portraits in this room are Mr. Millais's admirable "Sir Gilbert Greenall," a fine and telling portrait of "Sir Henry Rawlinson," by Mr. Frank Holl, and a portrait by a foreign artist, Herr Graef, of a lady with a very beautiful and romantic-looking face, which will be recognised as one of the most effective portraits of the year; it is a half-length, the arms and shoulders half seen through black lace, the figure relieved against a warm crimson background. A tiny sprig of flowers forms the only bit of bright colour in connexion with the figure. There is something unusual about the look of the whole, and the face is very carefully modelled, and the flesh-tints very fine.

In Gallery III. Mr. Orchardson's large portrait of "Mrs. Winchester Clowes" (142), makes a remarkable contrast to the last-named work. This is a somewhat audacious painting, with great "go" about it, a side view of a handsome blonde with a profusion of red hair, seated, and in a dress which forms rather an alarming mass of white. The complexion is very colourless, and, in fact, strikes us as hardly like flesh at all; so that the whole has rather a raw look, but there is an unquestionable power and originality about it. Mr. Watts's "Matthew Arnold" is an unmistakable likeness, but singularly rough in effect, and certainly not giving the essential characteristics of the expression very happily. There are in this room several other works of importance in aim, which do not strike us as successful. Mr. Frank Dicksee's "Is it Nothing to you, all ye that pass by," is a painting falling completely short of the pathos and significance which we might expect from the title: it is essentially common-place. Mr. Poynter has draped an expressionless half-length of a woman in a red mantle, and placed some columns behind her, and calls it "Helen," and accompanies it by a poetical quotation which seems intended to give an excuse for the unmovable and stony countenance of the figure. Mr. Britton Riviere gives a scene in the arena of an amphitheatre called "A Roman Holiday," a Christian martyr dying on the sand near a tiger which he appears to have slain in fair fight, and has wounded another which roars in the background; needless to say the tigers are excellent, and the man a nonentity: if the artist would keep to the animals and let the men alone, he would be much wiser. Mr. Heywood Hardy exhibits a large painting of a man in Eastern costume and a lion, life-size, to which is affixed a long quotation giving the story about a "holy lion" miraculously sent to help some holy man called "Sidi Ahmed ben Avuda" in his designs. The lion is a very good one, as we might expect any lion of Mr. Hardy's would be; but it might just as well be called "Tame Lion and Keeper." All these are works in which a poetic or imaginative aim is suggested in the title of which there is no trace in the picture: an anomaly to which we altogether object. If a painter professes such an aim, his work should show evidence of a serious interest to illustrate it; in the absence of this, such high-sounding titles are only so many tricks played upon the spectator. Following the pictures round, we notice Mr. Browning's "Tan-garden, Dinant," another example of this young painter's uncompromising but entirely prosaic realism, out of which perhaps something more to the purpose may be evolved in time. Mr. Weguelin's "The Fishers" is a pretty bit of child nudity. Mr. John Pettie's "Trout Fishing in the Highlands" is essentially a landscape, and a very good one in its way, full of atmosphere and moisture; one can smell the healthy raw Highland air in it. Mr. Hook's "Nearest Way to School" is one of his seaside scenes in his usual admirable free manner. Mr. Vicat Cole is a fortunate man. His "Wargrave" is one of a series of his own landscapes which he has had the privilege of hanging in the best positions in his capacity this year of sole arbiter over the landscape contributions. If the question were answered, what are the things which have been turned away as inconsistent with the prevalent ideas of Academicians about landscape, we imagine, if all we hear is true, that some very interesting and significant disclosures would be made. Mr. Cole's landscapes are all good specimens of polished and finished picture-making, completely answering their own aim; pretty and conventional. This is what we have come to in the native country of Constable: not an encouraging reflection. Mr. H. M. Paget, a name we do not remember, has made a point with a painting entitled "Buondelmonti's Bride," an illustration of a ghastly Florentine story of murder and retaliation. Mr. Watts's "Miss Baldock" is a charming portrait of a young lady in evening dress, quarter-length only, remarkable for its bright and warm tones. Mr. F. Goodall makes a good hit in "Artist and Model," where a little girl is holding up a biscuit as a bribe to a big fat pug, seated on a cushion before her, to remain quiet till she has copied his outline on paper; the painting is very clear and effective, the dog especially good. Mr. Boughton's "Hester Prynne" (237), the heroine of the "Scarlet Letter," visiting an infected house in time of pestilence, is one of the works

which strike a higher note than the average. Hester, a thin-cloaked figure of sad and patient countenance, with the embroidered badge on her bosom, stands outside the door of a house, on which a text is chalked, "Lord, have mercy on us," as the sign of an afflicted home. The figure realises very well Hawthorne's creation, far better than such illustrative paintings commonly do, and exhibits all the best qualities of its author's art. In the background passes a figure evidently intended for that malicious old reputed witch, Mother Hibbins, who plays a subordinate part in the story. She looks round with malice, her childish companion with fear, at the principal figure. This is a comparatively small and unpretending work, but it has the merit of really illustrating the subject selected.

Mr. Holl's portrait of the Principal of Brasenose College is a good one, somewhat disturbed by the very strong red of the shoulder-trimmings of the gown. Mr. Millais has, near this, another scholastic portrait,—the Rev. John Caird, as Principal of the University of Glasgow,—one of the most masterly of this year's portraits. His "Cinderella" is evidently painted from the same model as the girl-portrait in the Grosvenor, but not, to our thinking, equal to it, though we observe the general opinion goes the other way. Mr. H. W. B. Davis's "Noon,"—cows in a landscape,—is as good as the other work we have mentioned before. We must not leave this gallery, though, without mention of Mr. Marks's "Author and Critics," his principal work this year; an interior, where a dry, shrivelled old gentleman is reading one of his own manuscripts to two listeners, in the elder of whom the weariness of what he has heard, combined with apprehension of what is to come, is admirably expressed; there is not a better bit of facial character in the exhibition. Among the objects strewed about the apartment, the paste and scissors are appropriately prominent.

The central place in Gallery IV. is occupied by Mr. Leslie's "Hen and Chickens" (295), a very uninteresting picture of a game of romps among girls in a garden. Of Mr. Fildes's two life-sized studies of female personality, entitled respectively "Doubts" and "Dolly," the lady represented in the first-named work is the best and most interesting, a very sweet figure, set-off with very delicate affinities of tone in the costume. "Dolly" is a little too blowsy. These may be compared with the same painter's powerful study of "A Venetian," in the next room,—a painting of a young woman of tremendous vitality, with a profusion of tresses,—

"Blue-black, lustrous, thick like horse-hair,"

and arrayed in colours which are almost startling. The artist seems to have taken for the present to this kind of illustration of types of feminine life, and very interesting studies they make, and are carried out in a most thorough manner. A single figure study of another type is shown by Mr. Val. Prinsep, in "The Young Solomon," a painting (one of the results of his Indian expedition) of a young prince with a sword held across his knee, enthroned in a seat flanked by metal models of peacocks, the tails of which spread out into a kind of shell-form at the back. Mr. Gow's "Montrose at Kilsyth" falls short somehow; it is a good subject, but Montrose's face is not interesting, and the other figures are too much crowded up to detach themselves into any individual interest. Mr. A. H. Tourrier has spent much pains over a very clever historical painting of Galileo, making his recantation before the Inquisition; there is a great deal of thought in this picture; the various countenances of the Holy Fathers are very significant as to their respective feelings; some vindictive, some easy and good-naturedly satisfied; one only,—a dignified old man,—betrays some doubt as to the right and wrong of the case. The aged Galileo, a pathetic figure, kneels in the foreground. We cannot but feel it absurd that a painting like this, very good in execution and having a really serious aim, should be cornered, and a central place given to anything so pointless as the "Hen and Chickens" aforesaid. Mr. Farquharson's "Yet Twilight lingers still" is a fine solemn evening landscape. Mr. MacWhirter balances it with a remarkably bold attempt to render sunrise effect among rocky hills, the whole picture consisting of mist and light and half-shadowed peaks; perhaps there have only been one or two landscape-painters in the world who could really have succeeded in such a subject, but it is at least a fine attempt. Mr. Calderon has a charming child portrait, "Daisy," and Mr. Boughton scores another point here in his "Scheveningen," in which the interest consists not in the flat beach, but in the strange uncouthly-dressed figures which walk about it, the sex of some of whom it is hard to decide. A painting by Mr. G. Waterlow, "Outward bound," should be looked at, for its natural effect and very good though not pedantic arrangement of composition: the mail-coach with the "Outward bound" passes across the middle distance going out of the picture, and all the lines and movement of the whole scene seem to drive from right to left with it in a manner which gives great movement and life to the whole. Among portraits, too, Mr. Collier's "Sir Joseph Hooker," and Mr. Ouless's "Mrs. Butterworth," must not be forgotten.

## THEATRES AND FIRE.

THE recent terrible series of theatres burnt down, which commenced with Nice, to be followed with the theatre at Montpelier, and that in Greece, in the classic Piræus, has produced in France scarcely less excitement, now fortunately calmed down, than throughout Europe. Paris has been somewhat cruelly treated by fire recently, and facts concerning the sadly deficient fire service, decidedly calculated to alarm even the least timid, have been brought to light. The Paris municipality, in general so admirably organised, has revealed in this respect defects which show it to be very much behind London and New York. Paris possesses no such skilful body of men as act so courageously under the orders of the ever-ready Captain Shaw; while the almost perfect organisation of the New York Fire Brigade, though it has often been brought before the Paris authorities, has aroused no desire of emulation; and yet fires,—though, perhaps, this may be a reason,—are rare in Paris in comparison with our own metropolis or New York. The large, almost exclusive, use of stone, the construction of the floors, and the general solidity of the houses in Paris, oppose a resistance to the commencements and effects of fire which is unfortunately too little known on the banks of the Thames or on the Hudson.

M. Garnier, the eminent architect, does not alone content himself with his artistic reputation; he is at present publishing a lengthy account of his great creation, the New Paris Opera House. In the second volume of this work, which has just appeared, M. Garnier has devoted a chapter to the fire-service of the huge establishment,—a chapter which, apart from its instructive interest, is scarcely less amusing from the observation it shows of human nature. M. Garnier's experience as a French professional man will, we feel sure, be found singularly to agree with that of his brethren on the English side of the Channel. This being literally a burning question, we translate M. Garnier's chapter:—"There is little special to be said of the fire-service at the Opera House, except that if it differs little in principle from the means usually employed, it is at least established on a large and developed scale. The reservoirs placed in the upper portions of the building are vast, and comprise cylinders of compressed air under a pressure of three atmospheres; the establishments, furnished with every requisite apparatus, are as numerous as possible, and disposed in such a manner as to enable every part of the edifice, but particularly the stage, to be easily submitted to their action. A strict watch is organised, and special electric bells notify to the central office the spot at which aid is required. In addition, the engines are examined every day. Indeed, I do not think that there exists in the world a monument in which the necessary precautions have been taken with greater care. I cannot say that I have entirely satisfied the firemen, who seemed to consider the Opera House as little else than the recipient of a vast pump, to serve for little else than to contain complicated apparatus of every sort. Nevertheless, what I have used is more than sufficient, and now the firemen require nothing further. If, indeed, everything is well considered, I must render full justice to the fire-brigade, which has directed me in every case. I have only executed the instructions given me, and endeavoured to carry them out as far as lay within my power without interfering with the other necessities of the theatre. As is invariably the case, the house was not authorised to be opened until it had been duly visited by a special police commission appointed for the purpose. If, therefore, an accident were to occur, and any omission were regretted, I cannot be considered responsible; while, on the other hand, I cannot take upon myself any credit. It is the fire-brigade which choose and dispose the engines they require for their work; the architect has only to conform as far as is possible, and confine himself to being in this case a simple executant. This is what I have done. Not but what I received innumerable propositions, emanating from inventors who were desirous to explain their systems; but in everything proposed to me, I found nothing that was practical. I invariably submitted the more reasonable suggestions to the head of the fire-brigade, who judged of their feasibility. I may add that every one of these suggestions was put aside; practical sense and knowledge of the requirements of the case were in every instance wanting." M. Garnier here enters into a description of several of the amusing inventions submitted to him. One consisted of the proposal to have above the stage a huge cistern, which, after the fashion of a shower-bath, was at need to flood the stage. Fancy the possibility of an accident! As for the technical difficulties of supporting such a cistern, or its connexion with the scenery, not a word is given in the 200 pages of the suggestion. Another inventor was desirous that every spectator, as well, of course, as the actors and actresses, should be supplied with an *extincteur*, which could be "easily *artistically* decorated." Every one at an emergency would thus be able to combat the terrible element. "And to think," remarks M. Garnier cynically, "that these gentlemen are voters! . . . But let us pass over these fads," he continues, "which sadden rather than amuse one, when it is remembered that they are not isolated cases; too many imagine that they can be experts in the art of others when they scarcely know its A B C! Architects know this, perhaps, better than any one; not the most insignificant little *bourgeois* but what imagines he is an Iotinus, or the equal, at least, of Philibert Delorme, because he has, perhaps, put up his own paper in his dining-room. It is only peasants and workmen who are exempt from this harmless mania."

## THE OBLIGATORY EXAMINATION SCHEME.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

As will be known to many of our readers, the Royal Institute of British Architects some time ago passed the following By-law, viz.:—

XIV. All gentlemen engaged in the study or practice of civil architecture, before presenting themselves for election as Associates, shall, after May, 1882, be required to pass an examination before their election, according to a standard to be fixed from time to time by the Council.

The following are some of the particulars of the scheme referred to by Mr. Whichcord in his opening address, and by subsequent speakers at the Conference of Architects (as reported on another page), viz.:—

### REGULATIONS OF THE EXAMINATION.

1. The examination under By-law XIV. is in reference to professional study and practice only.

2. The names of those who pass will be returned alphabetically, and it is intended that at first the test shall not be severe.

3. Previously to the examination the candidate must submit as probationary work authenticated proofs of his ability in drawing and perspective (see paragraph 20), and should these not be deemed sufficiently good, he will not be admitted to the examination, and the fee will be returned.

4. The examination will be held at least twice every year, in or about the third week in October and March respectively, or at such other times as may be specially appointed.

5. Candidates are required to send in upon a printed form, to be previously obtained at the Institute, their applications, together with their probationary work (as set forth in paragraphs 20 and 21), two clear weeks before the first day of the examination, which will be duly advertised.

6. The probationary work and all work done during the examination by each candidate will be marked with a number to be assigned to him by the moderators, by which number he will be distinguished throughout the examination.

7. The examination will be partly by papers of questions to be answered in writing and by drawing, and partly oral. The former examination will be held on Tuesday, Wednesday, and Thursday, from 10 a.m. till 5·30 p.m. each day, with an interval of one hour for luncheon. The oral examination, which will have reference to the probationary work and to that submitted during the examination, will be held on Friday.

8. A fee of three guineas must be paid by each candidate on sending in his formal application to be examined: the said fee to be placed to his account as his entrance-fee should he be elected an Associate within eighteen months from the date of his passing.

9. The examination will be conducted by a board, to be from time to time appointed by the Council, and to consist of Fellows of the Royal Institute of British Architects: the number to be not less than five nor more than twelve.

10. Before the examination the Board will examine the

probationary work and decide whether or not each candidate shall be admitted.

11. The Board will distribute the subjects for examination to individual members of the Board who will set the questions, examine the drawings and papers, and assign the marks in each subject. The questions will be subject to the approval of the Board of Examiners.

12. The oral examination will be held by the Board: three members thereof, being examiners, to form a quorum.

13. For each examination there will be appointed two moderators, to be elected by the Board from the class of Fellows; or from those Associates who have passed either the examination under By-law XIV. or the Voluntary Architectural Examination in the Class of Proficiency.

14. The moderators will receive from the secretary the drawings submitted as probationary work as well as the optional work, if any, and prepare a list of the same for the examiners. The examination will be superintended by the moderators, one of whom must always be in the room during the hours of examination. The functions of the moderators will be to distribute the question papers: to see that the instructions of the Board are fulfilled; to take care that no assistance is given by one candidate to another, and that (except themselves) no other persons but the candidates be in the room or hold communication with the candidates during the hours of attendance; to allow no books to be used (except such as may be specially permitted); to verify the work produced in the room by each candidate; to see that the proper number is affixed thereto (see paragraph 6), and to hand over such productions to the Secretary each day.

15. The examiners will furnish under cover to the secretary, in time for the opening of the examination, the papers of questions for each portion thereof.

16. Within fourteen days after the last day of the examination, the examiners will lay before the Board a report stating the number of marks assigned to each paper; and the Board, on consideration of such report and the result of the oral examination, will report to the Council the names of the candidates who have passed. The number of marks gained by each candidate will not be made public.

17. Those who have passed will be at once informed thereof, with a view to their becoming candidates for election as Associates. Should a candidate not be passed by the Board he will be informed thereof by the secretary, and no public notice will be taken of his candidature.

18. All probationary work submitted by a candidate will be returned to him on his application after the official announcement of the names of candidates who have passed, but no drawings or answers produced in the presence of the moderators will be given up.

19. All practitioners of architecture who have been in the active exercise of their profession previously to the 1st of January, 1875, will be exempted from submitting any probationary work.

[During the interval of one hour (from one till two), on Tuesday, Wednesday, and Thursday, the candidate will be required to leave the examination rooms. No luncheons will be served to or permitted to be taken by the candidates within the Institute.

Examinations under By-law XIV. may be held in the principal towns of the United Kingdom, and, if practicable, under the supervision of those architectural societies whose regulations shall have been recognised by the Royal Institute of British Architects. The arrangements for these examinations will be subject to such conditions as the Council of the Institute may from time to time prescribe.]

### PROGRAMME OF THE EXAMINATION.

20. *Probationary Work* (to be scheduled and delivered with the Application Paper). The plan, elevation, and section of a building of the candidate's own design (not necessarily extensive or elaborate), with a perspective drawing, one sheet of details, and a drawing of some ornament from the round or relief. These drawings must be entirely the work of the candidate's own hands, but it is not necessary that they should be specially prepared for the examination.

21. *Optional Work (if any).*—Specimens of the candidate's work as a student, such as measured drawings, notes or essays on architectural subjects, may accompany the probationary work.

22. *Work to be done in presence of Moderators.*—Tuesday, from 10 a.m. till 1 p.m. *History of Architecture* (to be illustrated by sketches): an outline of the leading peculiarities of the principal styles of architecture, with the special characteristics and history of any one of the following periods, as the candidates may select, namely:—The history of Greek or Roman architecture, the history of the architecture of Italy or France from the tenth century to the end of the fourteenth century, the history of the architecture of Italy or France from the beginning of the fifteenth century to the present time, the history of the architecture of England for some one century between the years 1100 and 1700 A.D. From 2 p.m. till 5.30 p.m. *Mouldings, Features and Ornaments of any one Architectural Style* (to be illustrated by sketches. The words "architectural style" may be understood as meaning Greek, Roman, Byzantine, Romanesque, one period of Gothic (English, German, French, or Italian), Renaissance, or one of the transitional varieties. Wednesday, from 10 a.m. till 1 p.m.; from 2 p.m. till 5.30 p.m. *Materials, Construction and Sanitary Science* (in two papers). The nature and properties of building materials, including their decay, preservation, quality, and strength, and their application in building; the principles of construction as applied in practice to foundations, walls, arches, vaults, roofs, floors, and partitions; drainage, sanitary arrangements, and requirements; the application of formulæ for calculating the strength of materials; shoring and under-pinning, and dealing with ruinous and dangerous structures. Thursday, from 10 a.m. till 1 p.m. *The Plan, Section, and Elevation of a Building, with the Details of Arrangement for a selected purpose, adapted to a particular Site.*—The plan of a site will be put before the candidate, and he will be required to fill in (to a scale of ⅛ in. to the foot) the detailed arrangement of a building for a given purpose, as, for example, a parsonage for a town parish, a residence for a surgeon or other practitioner, a suite of offices. For the guidance of the candidate a short statement of the special requirements will be set forth. A plan of one upper floor and of the roof may be added by the candidate if required to explain his scheme. From 2 p.m till 4.30 p.m. *Specifications and Methods of Estimating the Cost of Erecting any Building*—Lithographed drawings of a building of not unusual character will be prepared, and the candidate will be asked to write a specification of the work required in one trade; he will also be asked some questions tending to elicit his knowledge of the mode of specifying for other trades and of estimating cost. From 4.30 p.m. till 5.30 p.m. *Professional Practice.*—The general conditions usually appended to a specification and contract.

23. *The Oral Examination* on the probationary work and on the written and graphic examination will take place on Friday.

[The Oral Examination will be continued by the Board on Saturday if the number of candidates require it.]

24. The number of marks allowed by the Examiners will be 600, thus sub-divided:—

| | Marks. |
|---|---|
| History of Architecture, illustrated by sketches..... | 100 |
| Mouldings, Features, and Ornaments of any one Architectural style, illustrated by sketches..... | 75 |
| Materials, Construction, and Sanitary Science..... | 200 |
| Plan, Section, and Elevation adapted to a particular site ..... | 75 |
| Specifications and Methods of Estimating..... | 125 |
| Professional Practice..... | 25 |
| Total..... | 600 |

25. A candidate to be entitled to pass must obtain at least half the number of marks (namely 300), though this proportion need not necessarily extend to each of the several divisions.

## TRAITS OF THE EARL OF BEACONSFIELD.

WE have received the following stray recollections from a well-known correspondent:—

When the late Earl and Daniel Maclise, the Royal Academician, were young men, I happened to be present at a visit from the former to the latter. The painter had just completed a picture from Moore's poem of the veiled prophet of Khorassan, which illustrated the passage in which that deceiver unveils himself to his dupe Zelica; and the then young D'Israeli came to see it. Mokanna's words in the poem are:—

"'Here, judge if Hell, with all its power to damn,
Can add one curse to the foul thing I am!'
He raised his veil; the maid turn'd slowly round,
Look'd at him, shriek'd, and sank upon the ground."

Maclise had utilised all his resources for the horrible in representing the false prophet, and his Zelica was as lovely as was usual with that accomplished painter's types of beauty. D'Israeli expressed his admiration of the force and charms of the work, with the addition of this remark, "I do not see why she should be so much shocked at him, for they say that pretty women like ugly men."

It was shortly after this time that D'Israeli made his *maiden* speech in the House of Commons, which some one alleged to be *virgin* on the ridiculous! It was not so judged of, however, by all who heard it there. Thomas Wakley, the popular and eloquent member for Finsbury, of that time, remarked to me a day or two afterwards, in respect to it, "that young man told us that we should listen to him some day,—and I fully believe it,—and that the country will do so also."

Many years after this, when the future Prime Minister and Earl had just attained the high position of Chancellor of the Exchequer, I was waiting for the train to town at the Taplow Station of the Great Western Railway. I was a good deal before my time, and several other people were also on the platform, when a page appeared on it in charge of some luggage, and of an important-looking despatch-box which he deposited on the top of it. On this box appeared, in large letters, the inscription "The Chancellor of the Exchequer," which, as may be supposed, excited much attention. When expectation was thus at its full pitch, the newly-appointed Chancellor of the Exchequer himself appeared, and became immediately "the cynosure of neighbouring eyes." Evidently he fully appreciated and enjoyed the situation as he paced backwards and forwards on the platform, if not quite with the stride and the step of a stage hero, yet with a full and assured consciousness of his newly-acquired pride of place.

The last time I had the opportunity of seeing this remarkable and great man was at a public dinner of the Society of Arts, at which he had accepted the office of chairman. He commenced his speech on this occasion with some solemnity,—"A hundred years ago," he said, such was the state of things, and such and such changes have taken place, and so on; and the same phrase of "a hundred years ago" was brought in two or three times afterwards with much effect, in the course of a very interesting address. I was seated where I could well see and hear him, and mark his features; and also I could perceive, just in front of, and below him, an unfortunate individual, who, most strangely for such an occasion, seemed extremely drowsy, and was in the most inopportune and uncomfortable condition of being between asleep and awake. As the future Earl rose to address the numerous meeting, I noticed his keen eye glance down at once to this discouraging object, which did not, however, seem in the least to affect him, and although he vouchsafed it an occasional look afterwards, it in no way interfered with the perfection with which he worked out his thesis, or refined the preparations for his epigrammatic points, which, as usual with him, were the telling landmarks of his speech, and with which his address on this occasion abundantly sparkled.

## ROYAL INSTITUTE OF BRITISH ARCHITECTS: ELECTION OF OFFICERS.

AT the annual general meeting, on the 9th inst., the following members were elected to the offices of President, Vice-Presidents, Secretaries, and other members of Council, for the year terminating on the first Monday in May, 1882:—

*President.*—George Edmund Street, R.A., F.S.A.

*Vice-Presidents.*—Thomas Hayter Lewis, F.S.A.; Horace Jones; Ewan Christian.

*Ordinary Members of Council.*—Arthur William Blomfield, M.A.; David Brandon, F.S.A.; James Brooks; Arthur Cates; Joseph Clarke, F.S.A.; Henry Currey; John Gibson; Octavius Hansard; John Honeyman, Glasgow; Edward I'Anson, F.G.S.; James Thomas Knowles; Edward Graham Paley, Lancaster; George Vulliamy; Alfred Waterhouse, A.R.A.; Thomas Worthington, Manchester.

*Honorary Secretary.*—John Macvicar Anderson.

*Secretary.*—William Henry White.

The following members were elected to to offices of Treasurer, Honorary Solicitor, and Auditors, for the year terminating on the first Monday in May, 1882:—

*Treasurer.*—Sir Walter Rockliffe Farquhar, Bart., Hon. Associate.

*Solicitor.*—Frederick Ouvry, F.S.A., Hon. Fellow.

*Auditors.*—Wyatt Papworth, Fellow; Thomas Miller Rickman, F.S.A., Associate.

The scrutineers appointed by the meeting to receive the balloting papers and report the result, were Wyatt Papworth, Fellow, and John Noyes, Fellow.

## SAFETY IN THEATRES.

AT the meeting of the Metropolitan Board of Works last week, the Building Act Committee presented a report, stating that they had proceeded upon the resolution of the Board of the 4th July, 1880, referring to them for consideration the question of the powers of the Board with respect to the alteration of existing theatres, and had received from the Superintending Architect a report, accompanied by plans, as to the present means of ingress and egress at the Strand Theatre, and the improvements which it is desirable to effect in the same; and recommending that the matter be referred back to the committee with power to act, with a view to the solicitor taking the necessary proceedings to enforce the provisions of the Metropolis Management and Building Acts Amendment Act, 1878.

On the motion of Mr. Runtz, the report was adopted.

Mr. John Jones asked if the committee was satisfied with the ingress and egress at the theatres in the metropolis?

Mr. Runtz, the chairman of the committee, said they were not satisfied with the present condition of things, and had ordered plans to be prepared of all the theatres, and were taking active measures to ascertain what was necessary to be done. The theatres recently erected and in course of erection were satisfactory; what he alluded to was the old theatres.

**New Assembly Rooms, Old Charlton Village, Kent.**—This building, just now opened, has been erected by Sir Spencer Maryon M. Wilson, bart., who has given it over to the inhabitants of Charlton for their recreation. The foundation-stone was laid on the 19th of June last by his eldest son. The building is in the Queen Anne style, executed in red bricks and Lascelles's patent stone. It consists of a large hall, capable of seating 300 persons in chairs, large platform, two reading-rooms, &c., in the rear. The cost of the above was 2,175*l*. Mr. William Tamsett, of Charlton, was the builder, and Mr. John Rowland, of Plumstead, Kent, was the architect.

# GENERAL CONFERENCE OF ARCHITECTS, 1881.

THE Sixth* General Conference of Architects, held under the auspices of the Royal Institute of British Architects, commenced its proceedings on Friday, the 6th inst., in the rooms at Conduit-street, which, although not so inconveniently crowded as on some former Conference opening nights, were yet well filled, many of the gentlemen present representing provincial architectural societies.

At eight o'clock the President and Council held a reception, and at half-past eight the President, Mr. John Whichcord, F.S.A., took the chair, and delivered the following

## OPENING ADDRESS.

GENTLEMEN,—It is now three years since a general invitation was given to the architects of the United Kingdom to meet in these rooms for the purpose of discussing questions connected with the art, science, and business of our profession; and ten years have elapsed since the first General Conference of British Architects was convened under the presidentship of the late Thomas Henry Wyatt, my esteemed predecessor, and for a time the honorary secretary of the Institute. He, at that first Conference, when doubts were expressed as to the expediency of making such conferences annual or biennial, hinted that he thought they should be made triennial; and the Council recently determined to allow three years to elapse since the last Conference of 1878, before inviting gentlemen to another. They also decided that another three years should pass before another invitation of a similar kind should be issued; and they were actuated, I think, by the remembrance that three years hence our jubilee would be attained, for in 1884 the Institute of British Architects will have been founded fifty years.

The programme we have to offer is perhaps neither new nor attractive. Indeed, it is pretty much the same, though in a more concentrated form, as that presented ten years ago, when Mr. John Hebb read an excellent paper on "Taking out Quantities and Measuring Works," and Professor Kerr treated with equal force on "The Commercial Aspect of Architectural Competitions," both subjects which still exercise the minds of many earnest and thorough workers in the cause of unity and intelligent reform. They are subjects which, during ten years, have received a great deal of elucidation, not only from professional inquirers, but from independent critics,—subjects also which are better understood by ourselves and the public than was the case ten years ago. I am not, however, going to treat at length of either subject in this address. I simply repeat what I said in 1879 from this chair, that "there is one detail of architectural practice,—often forced upon professional men who happen to be situated at a distance from the large provincial capitals,—which offers to the outsider an easy handle of criticism. It lies in the mode of payment adopted for bills of quantities." I commend this fact to your notice, more especially because the Council of the Institute have lately passed a resolution in reference to an alleged practice of a few architects and quantity surveyors,—a practice whereby an architect without doing a stroke of the work, or accepting one iota of the responsibility, receives a share of the commission paid to the quantity surveyor who, in the interest of their common employer, takes out the quantities. The course pursued by the Institute in this matter, both on the part of the various committees who have been occupied with the details of the subject and on that of the Council, will be fully explained to you in the address which Mr. Arthur Cates, as chairman of the meeting convened for to-morrow morning, will deliver, and which I am assured will be supplemented by papers on the methods now in vogue in different parts of the country.

On the question of competitions, much has recently been said, and the memorial presented by Mr. Street from more than 1,300 architects to the Council, praying that steps should be taken to place the competition system upon a more satisfactory basis, by means of united action on the part of the profession of architects, is fresh in your minds. Some of you may also be aware that, in the "Conditions" drawn up by the Council, in response to an invitation given by the Lord Provost of Glasgow, the leading suggestion of that memorial was not overlooked. Our difficulty, however, does not lie in recommending equitable conditions; the point is how to get such equitable conditions adopted, and then equitably carried out; and, further, how, when the conditions of a competition are not equitable, you are to restrain colleagues, especially the younger men, from ignoring their own interests no less than those of the profession to which they belong. Whatever may ultimately be resolved upon in this competition question,—after the Institute Committee on Competitions have finally reported and the Council have discussed the report,—whatever professional combination may be formed, I trust that the bad aspect of modern unionism may be kept steadily in view, so that we may always know what to avoid. At the same time, I admit that some sort of agreement must necessarily be made and adhered to,—such agreement to form a basis for the conduct of those whose interests induce them to take part in this now recognised and systematic lottery.

Perhaps it will assist the discussion of this subject, and save some heartburning and loss of hard cash, if I give you the outlines of a scheme of architectural competition which, within the last week or so, has been devised in order to obtain a variety of designs for a building proposed to be erected in London at an outlay of, possibly, a quarter of a million sterling. In order that you may understand the position, I must tell you that the proposed building is to be erected upon a site already covered with the foundation and basement walls of a huge structure, the construction of which was stopped a few years ago for want of funds. The site, together with the partially-executed buildings upon it, have been acquired by a group of well-known and experienced speculators, who, with or without professional assistance, have drawn up the conditions of a limited architectural competition, such as, I think, are unparalleled in the annals of architectural competition. First, they send a lithographed plan of the site, showing the foundations existing upon it, and though they "believe" the measurements of the walls, &c., on the site are strictly accurate, the competitor is advised to carefully survey it, for these foundations are to be utilised. As to the general character of the building to be designed, the competitor is left free to carry out his own ideas, provided, above all things, that the internal arrangements conform to those of the best similar buildings in this country, or on the Continent, or in the United States. The plans, sections, and elevations are to be drawn to a uniform scale of $\frac{1}{8}$ in. to a foot (unless $\frac{1}{16}$ in. be preferred by the competitor) with the leading dimensions figured. There are to be elevations of the principal fronts, longitudinal and transverse sections, with a plan of each floor. Each set of designs is to be delivered on or before the 20th of next month; the architects invited to prepare them are some half-dozen men of experience and position, myself being one of the number, and this is how we are to be remunerated. A sum of 150*l.* will be paid to each competitor "towards the out-of-pocket expenses," and "the designs and plans will become the property of the proprietors, who are not to be bound to adopt any of them." Now, gentlemen, when I was honoured with an invitation to join in this competition,—it being nearly twenty years since I have been a competitor in an architectural competition,—I wrote for further information, and in terms of which the following are extracts:—

"1. I presume that the six or seven architects selected to compete are all Fellows of the Royal Institute of British Architects, or, at all events, of admitted position in the profession. I think the names should be disclosed, that each may form his own judgment on this point.

2. The sum offered to each competitor towards the cost of his drawings is a satisfactory feature, but it is palpable that the only real prize to an architect of standing would be the ultimate employment to carry out the work, which is one of great magnitude and cost. For this reason, the proprietors should bind themselves to employ the architect whose plans are selected, upon the usual terms of professional remuneration.

3. A professional assessor should be appointed by the proprietors, and his award as to the merits of the several designs should be final. It is hardly probable that the proprietors themselves are qualified to interpret the refinement, of architectural design, or to deal with the reputation of six or seven leading architects. At all events, I think that the competitors should be informed who will be their judges.

4. I do not find in the instructions any allusion to the outlay contemplated upon the building, nor any limit as to height and number of rooms. I presume these are points purposely omitted."

The answers I obtained to the foregoing questions were not satisfactory; indeed, they were ludicrously the reverse. I was informed that the proprietors would exercise their own judgment in the selection; that they would be influenced in that judgment "in favour of a plain building giving the largest number of lettable rooms;" and that it was "the object of the proprietors to have a building which would secure the best commercial results." Observe, gentlemen, this is not an instance in which an attempt is made to evoke the latent genius of some heaven-born architect,—to call up from obscurity some patient, unknown, and struggling artist, who shall produce a monument that may hereafter be regarded as a certain mark in the varying records of architectural history. This is a plain business transaction, proposed by men of an eminently business character, to six or seven members of a profession supposed to be willing at all times to sacrifice its time, its talent, its hard-earned money, if not its good name, in a blind race for a small bag of sovereigns. The six sets of plans for a building which will cost at least 250,000*l.* will be acquired by the proprietors for the sum of 900*l.*, and from these six sets, the work of architects of standing and experience, some clever schemer of plans will be enabled to produce a final design possessing the highest commercial advantages, which, probably, a contractor may be employed to execute,—at all events, no assurance has been given that it will not be so. If there be anyone present who has responded to the invitation to compete, on such terms as I have described, for such a building as the one I allude to, I trust that he will refuse to assist in bringing discredit upon his calling as an artist and a man of science. I need hardly add that, after eliciting the information I have communicated, and making a final attempt to get the conditions altered for the good of my colleagues, I declined to join in the competition.

You will also, at the sixth and final meeting of this Conference, have an opportunity to hear and discuss the opinions of two gentlemen practically occupied in the art of mural decoration, a subject which, in 1878, at the last Conference, was ably treated by Mr. Armitage, the well-known Royal Academician and professor of painting. A paper will be read by Mr. Ford Madox Brown on "Mural Painting and the Gambier Parry Process"; and Mr. J. D. Crace, the son of the well-known and highly-esteemed decorator, Mr. Crace, is to read a short paper on "The Coloured Decoration of Public and Private Buildings." The subject of mural decoration is one of such importance to architects that I cannot but urge upon those of our Honorary Associates whose inclinations and occupations are directed to its study and practice, to give us the benefit, if not of their opinions, at least of their presence, on Thursday evening next, when my successor will, I trust, occupy this chair. I could have wished that William Burges had been alive to join in the discussion, or that our rooms might have been adorned on the occasion with his beautiful designs for mural decoration. The thought displayed in every scheme of wall-covering invented or adapted by Burges has always seemed to me to place him high in the ranks of those architects whose practice is concerned with this interesting branch of architecture.

During the week of the Conference, it has been arranged to pay a number of visits to various buildings, old and new, which are not accessible to the public, or even to the few who take an artistic interest in them. One of these buildings is Buckingham Palace, and it is almost unnecessary for me to say that the favour conferred on the Institute in this matter is a great one. Through the kind assistance of our patron, the Prince of Wales, members of Institute, and those non-members who are attending this Conference, will have the privilege of visiting the picture-gallery and the State apartments of Buckingham Palace. . . . . Then, in the afternoon of Monday, visits may be paid to some of the City churches, where Mr. George H. Birch has kindly undertaken to describe and explain, if necessary, various points of interest connected with them. On Wednesday, at eleven a.m., Mr. Street will receive members and their

* The first Conference was held in 1871, the second in 1873, the third in 1874, the fourth in 1876, and the fifth in 1878. Copious notes of the proceedings will be found in the volumes of the *Builder* for the respective years.

friends attending the Conference, at the Strand entrance of his great building, and accompany them through the Royal Courts of Justice, now in course of execution from his designs and under his able superintendence; and in the afternoon of the same day a visit is to be paid to the house of Sir Frederick Leighton, the President of the Royal Academy and our Honorary Associate. Further, at five p.m. on Wednesday, Mr. Matt. Wyatt will be ready to show any members that may desire it over the new Hospital for Consumption at Brompton,—a building of much practical interest, commenced under the charge of his father, the late Mr. T. H. Wyatt. On Thursday morning, at eleven, the Messrs. Doulton have kindly consented to throw open the famous Lambeth Potteries. . . . . Lastly, there is the visit to Hertford House, Manchester-square, the residence of Sir Richard Wallace, our courteous and distinguished Honorary Associate, who will himself be present to receive the President and Council, and who is most desirous that his magnificent collection of pictures and other objects of art should be seen by the architects of the United Kingdom. . . . . In fine, before the close of the Conference, it will be the duty,—a pleasurable duty, no doubt,—of my successor to offer our humble acknowledgments to her Majesty the Queen for the gracious permission we have received to visit Buckingham Palace; while the thanks to Sir Frederick Leighton and Sir Richard Wallace will, I feel sure, be coupled in a unanimous and enthusiastic vote.

There is one subject of discussion which, at the first Conference of ten years ago, occupied a prominent place in the programme, a subject which has, since that time, been frequently discussed within these walls, but which does not appear in the agenda of business prepared for your present consideration. I refer to the subject of obligatory examination for membership. That, as far as we are concerned, is now settled, and such being the case, perhaps I may be permitted to recapitulate one or two facts connected with the discussion of this important matter during the course of my presidentship, more especially because I know that there are present at this moment several gentlemen connected with the provincial architectural societies, whose action for or against may exercise an important influence upon the future of the chartered body of British architects. In my first presidential address I treated at some length of the possibility and desirability of preparing for the execution of that by-law (passed in 1877) whereby "all gentlemen engaged in the study or practice of civil architecture, before presenting themselves for election as Associates, shall, after May, 1882, be required to pass an examination before their election, according to a standard to be fixed from time to time by the Council." Well, we have fixed the standard for 1882, and in March next the first obligatory examination for membership will take place under the superintendence of a board of examiners composed of the president, vice-presidents, the honorary secretary, and seven Fellows. The regulations and programme containing the slight amendments passed at the business meeting summoned to discuss them, are now printed, together with extracts from the charter and by-laws, the forms of declaration and nomination, and the new rules for the award of the Ashpitel Prize, so that in this publication may be found full particulars of the course to be pursued by students and others for admission to the Institute as Associates.* It is proposed to send a copy to every member of the Institute, and should authorities of architectural societies in different parts of the United Kingdom express a wish to receive a certain number of copies, they shall be sent. Our object is to direct the attention of professional men, both members and non-members, to the kind of test we propose to apply to young men desirous of earning the honour as well as the advantage of the Associateship. And pray observe, gentlemen, I am using no mere form of words. At the present moment, every member of the Institute who has received a certificate of proficiency in the Voluntary Examination, is distinguished in our published roll by a special mark; and hereafter, every Associate who enters by examination will be similarly distinguished. A time will come, no doubt, when such a mode of distinction may be unnecessary, when most of those who joined under the original rules will sleep the sleep of the just, and the great mass of members will have entered by examination.

But, for the remainder of this century, I may fairly predict that new Associates by examination will be distinguished, in the roll of members, from their older colleagues. This is what I want gentlemen who have come here to-night from the great provincial centres to tell their pupils. I should like to be assured that, under the fostering advice and direction of architectural societies, students were preparing for the course laid down in this publication to which I have alluded; to know that in Glasgow, Manchester, Liverpool, Leeds, Leicester, Birmingham, Sheffield, Edinburgh, there are small groups of young men who look to the Royal Institute to confirm by examination the training they have received under the guidance of their local societies. But I fancy that some of you are saying of this obligatory examination, "Oh! it is only half an examination, only intended for Associates, and if young men will wait a few years, they will be able to enter, full-fledged, as Fellows." It is, therefore, but justice to those who think so that I should disabuse their minds of an undoubted error. You may have observed that lately a very large accession of new members has taken place, and at present about 100 others are waiting to be admitted as Associates. But comparatively few gentlemen are recommended by the Council for admission as Fellows. The applications, however, are numerous, and if the Council did not oppose every reasonable obstacle to candidates, a large number of new Fellows would be admitted, and would have been admitted during the last year. My opinion is, that before the close of 1882 the Council will recommend to the Institute an addition to the by-law referring to the obligatory examination of candidates for Associateship. They will recommend that no gentleman shall be admitted a Fellow until he has passed a certain number of years in the ranks of the Associates,—at least, that is my conviction and my hope. Meanwhile, gentlemen, enough has been done and is being done to prove the earnestness of our endeavours, within the Institute, to advance the interests, not of the corporate body alone, but of the whole profession of British architects throughout the world.

Mr. Street, R.A., said he ventured to make complaint of only one thing in regard to the address which had just been delivered, and that was its brevity. That, however, if it were a fault in one sense, was an example which might be usefully put forward by the President of a conference, and no doubt all who took part in the discussions would endeavour to emulate that good example. In the observations which he (the speaker) had to offer, he would be as brief as possible. There were four principal subjects which the chairman had brought before the Conference, and as to each of which he (Mr. Street) desired to say a word or two. As to the subject of quantities, he trusted, on behalf of those architects who never had anything to do with the preparation of the quantities for their works, that the deliberations of the Conference would lead the way to some more regular and systematic mode of preparing quantities for buildings, together with a more definite mode of payment for the work. He did not know what the experience of other architects might be, but his experience was that sometimes when the quantities of a building had been taken out, they were found to be either very full or very loose, and there was also a heavy charge for lithography. He hoped the Conference would be able to arrive at some improvement in the present mode of conducting quantity business. On the much more barren subject of architectural competitions, he wished to say a few words, because so many architects had done him the honour to consult him on the subject some months ago, when that astoundingly large memorial on competitions was presented to the Institute. It seemed to him that in much of the discussion that had taken place since the memorial was presented some points had been overlooked. It was, he thought, extremely desirable that whatever laws or rules might be framed by the Conference or by the Institute, should be as moderate as possible. If they attempted to go too much into detail, such rules would not be accepted by the public, nor, he thought, by a great many architects. What was desirable was the formulation of some short, definite rules for the acceptance of the profession and of the public too. If too much were attempted by the Conference, nothing would be done. If the conditions were made too complicated, the public would refuse to accept them, and possibly many architects would feel themselves debarred from becoming members of the Institute. He thought that any rules which would prevent the younger members of the profession from entering into competitions under certain conditions would be wrong and impolitic, for in competitions lay the only hope of many men who entered the profession without influential connexions of making themselves known. He was rather inclined to think that, in spite of the exceptionally bad case which the chairman had quoted,—certainly one of the most monstrous proposals he had ever heard of in connexion with competitions,—competitions were not so rife now as they were a few years ago. The system was, he thought, killing itself. Passing on to notice the programme of visits, Mr. Street said the members of the Conference all looked forward with pleasure to the visits to Sir Richard Wallace's house, to Buckingham Palace, and to Mr. Aitchison's charming work at the residence of Sir Frederick Leighton. In view of the promised paper by Mr. Ford Madox Brown on mural painting, Mr. Street called attention to the steps about to be taken by the Royal Academy to promote the study and practice of mural decoration, and stated that he had promised the Academy that from time to time architects would find suitable spaces in their building for the exercise of the powers of the students to whom prizes for mural painting would be offered every year. He thought that what the Academy proposed to do in this matter was the most practical proposal that had yet been made to,—he might almost say,—force mural decoration upon a world which, singular enough, did not seem to appreciate it as it should. With regard to the subject of architectural examination or education, — for one seemed to him to be necessarily mixed up with the other,—he thought there could be no doubt that any system of architectural examination involved, as a matter of course, more careful architectural education. But his principal objection to the scheme which had been prepared, was that it hardly went far enough, although he understood, and took it for granted, that the scheme as now presented was a very mild one, because it was the first attempt to enforce it, and that by degrees it would be made more strict in its terms; as it would need to be, because young men only capable of getting 300 marks out of the desired 600 would be extremely ignorant young men, and not fit to be members of the Institute. His decided conviction was that what was wanted was an examination which could be passed only by accomplished men. With regard to this question of architectural education, he ventured to refer to the work which the Royal Academy was doing in that direction. The Royal Academy had 400 students in its schools, and last year the rather astonishing fact occurred that the number of admissions of architects was equal to the number of admissions of painters, the number being precisely the same of each class of students, viz., 128. The architectural students were under the guidance of a very distinguished and able master, and they were visited once in every week by one of the architectural members of the Academy. Three of the architectural members, for instance, each took thirteen weeks' visiting and teaching, and he hoped that the result would be, as time went on, that the Academy would be able to send to the Institute students for examination of whom the Academy should not be ashamed. In order to encourage architectural students the Academy was holding out increased inducements. For instance, they were making the Travelling Studentship more valuable than hitherto. The Academy Travelling Studentship, in the Gold Medal Year, would be worth 200*l.*, and in alternate years the Academy intended to give a sum of money to enable a young architect to travel in England. In addition to these things, the Academy was establishing a modelling class for young architects; it compelled them to listen to lectures; and, in short, it was doing everything it could to fit young architects to pass the examination which the Institute had instituted. He trusted, therefore, that the level of the examination would not be kept too low. In conclusion, Mr. Street asked the meeting to give a vote of thanks to the chairman for his address.

Mr. Horace Jones said it afforded him great pleasure to second the suggestion of his friend, Mr. Street. Without occupying so much time as Mr. Street had taken in his exhaustive

* On another page we print the regulations and programme of the Obligatory Examination Scheme.—ED.

analysis of the four points of the chairman's address, he wished to touch upon one subject which he had had at heart for many years, and upon which he differed entirely from Mr. Street. He would do so by telling a little story which he had read. When the god Vishnu first of all got command of Heaven, he called unto himself his chief priest Brahma, and said, "What are all those multitudes upon the earth to do? We have opened a fine handsome gate, but we cannot get the people to come into Heaven." Brahma, who had the reputation of being a successful old man, said,—"If you open the door only just a little bit as you are doing, only the big and clever will try to get in. Instead of that, open the door wide, and you will find them all come up to the door, and then, when you have got them all there, you can gradually close the door and only admit the good ones." In like manner, he (Mr. Jones) said,—Let in all you can, and refuse no one that you can admit with honour.

Mr. Street having put the motion, Mr. Whichcord briefly acknowledged the compliment, thus bringing to a close the first meeting of the Conference.

## QUANTITIES.

THIS was the subject for discussion at the second meeting of the Conference, which was held on Saturday morning, and was attended by about sixty gentlemen.

### INTRODUCTORY REMARKS BY MR. ARTHUR CATES, CHAIRMAN.

AT the concluding meeting of the Third General Conference of Architects, held June 18, 1874, a resolution was adopted requesting the Council of the Institute to bring the subject of "The Employment of Surveyors" before a future Conference, and in accordance with that request, two mornings of this Conference have been appropriated to the subject, under the more general head of "Quantities."

The consideration of the subject which has thus been allocated for discussion at these two meetings will probably be assisted if in opening the proceedings I occupy a few minutes with a summary of what has been done in relation to the subject since the question was first mooted in these rooms.

In his opening address at the First General Conference of Architects, on May 22, 1871, the President of the Institute, Mr. T. H. Wyatt, entered at some length upon the practice of architects in relation to quantities, and expressed his own views as follows:—

"I believe that the simplest and most satisfactory arrangement would be to disconnect the surveyor from the builder, to make him (on the nomination of the architect) the agent and adviser of the employer in the matter of quantities, as the architect is in matters of arrangement, taste, construction, and decoration. That he should take out the quantities from the architect's drawings on his own responsibility; that he should be paid by the employer instead of by the builder (half on the completion of his quantities, and half on completion of the work and settlement of account). That the priced bills of quantities should be attached to, and form part of, the contract, as much as the drawings and specifications; and when signed and sealed up, should not be referred to again till necessary for making up the accounts, except with the consent of *both parties*. That the builder should not be held responsible for the execution of any works not included in these quantities, and for which naturally, as they have not been included in his priced bills of quantities, he has not been paid; but that, on the other hand, he must be held responsible to execute (or to have deducted from his bill, in making up the final account) any portion of the work included in the quantities which he has not executed. We should thus, I think, have a fair guarantee that only the actual quantity of work shown on the drawings was included in the quantities, and thus the cost of our works would not be unnecessarily swelled. The employer would be fully protected, for as long as his architect and his surveyor were honest men, he would only pay for work actually executed, and there would be no margin taken to cover unknown contingencies. I have adopted this system in my own practice, and can scarcely imagine, though I should be ready to hear, any practical objection that can be urged against it.

I can conceive nothing more unjust or more opposed to the spirit of equity than to require a builder to take the quantities as they come from your surveyor, denying him the right to appoint a surveyor to verify on his part the accuracy of those quantities, and yet to bind him in a contract to execute all the works shown on a certain set of drawings, and described in a given specification, though many of the items may have been omitted in the quantities you force him to take without guaranteeing their accuracy. I hear this is sometimes sought to be done."

The interest which the introduction of a then novel subject into the presidential address aroused was strikingly evidenced by the animated discussion which followed the delivery of the address, and which was almost exclusively devoted to this question.

On the following day, at the second meeting of the Conference, a paper was read by Mr. John Hebb, "On Taking-out Quantities and Measuring Works," in the course of which he asked, "Why should not an architect take out his own quantities?"

As a consequence of the interest thus manifested, at the adjourned meeting held May 26, 1871, the Council was requested to appoint a committee on "The Employment of Surveyors." This committee circulated widely in the profession the following questions, viz.:—

1. Is it desirable that the practice generally adopted in the case of large works (whereby a surveyor is appointed to represent the employer, and another the builders, such surveyors being jointly responsible to the builder for the accuracy of the quantities), should be in any way modified?

2. It was suggested as a convenient course for general adoption that the quantities should be prepared by a surveyor nominated by the architect, and who would be responsible to the employer for his accuracy, the builder being relieved from any responsibility in regard thereto.

3. The adoption of this course will go far towards disconnecting the surveyor from the builder, and making him the agent and adviser of the employer in the matter of quantities, &c. Would this be a system advantageous and desirable for general adoption?

4. A suggestion that the bills of quantities should form part of the contract was well received. Architects in leading practice mentioned that they had for many years adopted such a course, and found it to work well, and to be equitable to both employer and builder. Are there any valid objections to the introduction of such a system, the dimensions on which the bills are founded being, in such a case, placed in the hands of both architect and builder?

5. It appears to be not unusual for some architects, especially in the provinces, to furnish the bills of quantities for works to be carried out under their own superintendence. However convenient this practice may be in some instances, are not special precautions necessary? Should not the "bills" in such instances invariably form part of the contract? And from whom should the architect receive payment for such quantities?

6. It was mentioned as being an ordinary and reasonable course that the responsibility of the accuracy of the quantities should be thrown upon the builder, by fixing a time, say one month from the acceptance of the tender, during which he might prove the quantities, but after which no objection would be allowed. Might not great injustice be committed under such a system?

7. It would be desirable to secure more general uniformity of practice with regard to the taking out of quantities. How can this be best attained?

To these questions a large number of replies were received, evidencing a wide diversity of opinion, in some cases, however, to be explained by individual and local circumstances. A few extracts from these replies may be interesting on this occasion, and I will read a dozen, characteristic of the diverse views expressed, all selected from the replies of men of good position:—

1. "I think it objectionable that the architect should have anything to do with the quantities. It places him in a position of suspicion from both sides, and it places too much power in his hands."

2. "The suggestion that the bills of quantities should form part of the contract, is, I think, highly objectionable. It would, in fact, be a direct premium to carelessness, &c.

If the architect supplies the quantities he should be responsible for their accuracy. . . .

The surveyor being paid for taking the quantities, should be held responsible . . . . The idea of throwing the responsibility of the test of accuracy on the builder is an unjust one."

3. "The bills of quantities cannot form 'part of the contract.' They will necessarily become the whole substance of the contract, drawings and specifications being merely explanatory of the mode in which the work is to be done. This system is open to the fatal objection that it would leave the proprietor unprotected against all errors or omissions, which protection it was the object of the quantities to provide for him."

4. "The architect and the builder should keep at arm's length, and the employer should know of every arrangement between them.

Quantities ought not to be charged for which the builder has to verify or to retake."

5. "I consider it most objectionable for any architect to furnish quantities."

6. "I always make the quantities part and parcel of the contract, and I have always found such a plan most advantageous for the employer. I always let my surveyor make a copy of the dimensions, and give them to the builder.

I think it a great mistake for architects to take out their own quantities; if they do, they should be part of the contract, and be paid for by the employer."

7. "The employment of the architect to take out the quantities should have the *full* sanction, specifically given, of the employer. The bills should be attached to the contract.

The architect should receive payment *direct* from the employer in the same way as he does his commission as architect."

8. "It seems to me that when an architect advises the employment of an independent surveyor, as the agent of the employer, he should have no pecuniary interest whatever in the quantities."

9. "I think every possible objection should be taken to architects taking out their own quantities; it leads to endless disputes, nearly always to the discredit of the profession, and quite neutralises all efforts to render the members of it more of artists or less of surveyors."

10. "The employment of a quantity surveyor other than the architect is very advantageous to the designer of the plans, because omissions in specifications, neglected details in plans, are suggested by him, and hence greater completeness is obtained.

11. "I consider it the proper course that the architect should take out the quantities from his own plans. He, of all men, should know the anatomy and construction of the plans. Of course he is liable to error, but he should take great care and precautions to avoid it."

12. "I am of opinion that it is best for the architect to furnish bills of quantities, with a heading similar to that subjoined,* and to protect himself by taking a memorandum from the builder like that marked† (see below).

I have no objection to other architects adopting whatever plan they like, but I protest against the Institute laying down any rule casting any stigma or reflection on those 'who take out their own quantities.' Some architects are 'mere artists,' and cannot take them out; some are too lazy, and 'won't;' some too nervous, and 'dar'n't.' I hold that the truest architect is he who can and does do everything, from the design to the bill of quantities."

After considering the lengthy and conflicting replies received, the committee agreed to the following report:—

### EMPLOYMENT OF SURVEYORS.

*Resolution of the Conference of* 1871:—"That with reference to the appointment of surveyors to take out quantities (a custom on which evidently a good deal of difference of opinion exists) the Council of the Institute be requested to appoint a committee of five or more members, and that, with a view to assist the Institute secretary in obtaining provincial opinion on this matter, and as representing the views of the surveyors, the names of Mr. Arthur Cates and Mr. T. M. Rickman be added to this committee; and that the report of this committee be dealt with in the same manner as has been suggested in the two former cases."

In accordance with the above resolution the special committee subsequently appointed by the council to consider the subject of the employment of surveyors beg to report as follows:—

The wide range of the subject, and the varied opinions which had been expressed at the Conference, rendered it difficult for the committee to determine how best to proceed; after having collected a certain amount of information, they prepared a series of inquiries which were circulated in the profession throughout the country, and to which sixty replies were received; these replies evince a wide diversity of opinion, arising from local circumstances and individual varieties of practice, and have satisfied your committee that for the present it will not be practicable to lay down any fixed rule for the guidance of the architect in dealing with "quantities." Each case must be governed by local or personal considerations, and the committee have therefore deemed it expedient to make their recommendations and expressions of opinion so general as to meet these varying conditions.

The object to be attained by the employment of surveyors to take out the quantities of a building is to afford the builders who are to tender one uniform basis for competition, and to define more exactly and accurately than can frequently be done by the general drawings and specification the exact amount and nature of the work to be executed; and as no employer should desire to obtain from his builder more work or greater value, and should not obtain less, than was included in the estimate, while on the other hand he should have the greatest facility to secure due allowance in the case of omission, *it would appear reasonable* that the bills of quantities, which should express in an exact form the intentions of the architect as set out in his general drawings and specification, ought to form a part of the contract, and be dealt with as a recognised exposition of the responsibilities of both employer and builder.

The established practice in London in the case of large and public works, by which one surveyor is nominated by the architect to represent the employer, and another by the builders to act for them, giving the construction of the work and the elucidation of the architect's ideas the advantage of the experience of two professional men, who consider each question from different points of view, has apparently for many years worked well; though in many cases the advantage derived from the engagement of two can only be considered nominal. There is an understanding that the surveyors so employed are responsible to the builder for the sufficiency of the quantities supplied, and the general drawings and specification prepared by the architect being sufficient, the employer is guaranteed against any excess of cost, and the builder is held safe against loss from errors of quantity; on this system your committee do not think it necessary to make further remark, although some objections have been made to it by leading members of the profession, who prefer to adopt the course next mentioned.

Many eminent architects have adopted the course of nominating a surveyor who shall prepare the quantities on his own responsibility, and, as far as the builder is concerned, such quantities become practically a part of the contract. Your committee thoroughly appreciate the great advantages which the architect (and no less the employer) may derive from the employment of a surveyor acquainted with all the details of design peculiar to the architect, and with his general manner of proceeding, and also how such an arrangement facilitates proceedings when time is insufficient for the preparation of drawings and specification in such full detail as would be necessary if a stranger were employed as the surveyor. They are, therefore, of opinion that this system may in such cases be advantageously adopted, provided always that the builder be relieved from any responsibility as regards the quantities, and that the bills be considered as representing the work to be done. The successful working of such a system must depend entirely on the ability and position of the surveyor employed, his relation to the architect, and the extent of the confidence which the builders tendering may repose in him.

It appears to be an ordinary custom in the provinces for the architect to supply the quantities for the carrying out of his own designs; where this is done, it should be with the knowledge and concurrence of the employer, and the quantities should form a part of the contract. The architect accepts the duty of providing the quantities, and should not attempt to evade his responsibility by throwing on the builder, as is sometimes done, the labour and risk of checking them, a course which your committee believe

* "The contractor whose tender is accepted will be at liberty to compare the following bill of quantities with the drawing and specification before he signs the contract, and any errors then pointed out will be corrected. After accepting the bill of quantities as correct, no notice can be taken of any error that may subsequently be discovered. The contractor is to pay the architect two per cent., on the amount of the complete tender, for the bill of quantities, and ——— for printing, when he signs the contract."

† "I hereby certify that I have examined the bills of quantities supplied by Mr. ———, for the and find them correct; and I hereby agree to accept them as correct, and to take all responsibility as to their accuracy or inaccuracy upon myself in consideration of the advantage which they have afforded me."

to be unsatisfactory, and in some cases likely to lead to great injustice.

Your committee are of opinion that the practice of making the bills of quantities part of the contract has not been fully considered. Recognised or not, the quantities should be invariably referred to as the interpretation of the general drawings and specification; and in all cases where they are supplied to the builder by the architect, or by a surveyor in whose nomination the builder has had no part, and who is not responsible to the builder, they should form part of the contract. At the same time, when once it is admitted that these documents are to form part of the contract, the necessity for the employment of more than one surveyor in their preparation vanishes.

The more general adoption of quantities, the extension to country work of the system of measurement usual in London, the gradual modification of local terms and usages, and, not least, the discussions consequent on such meetings as the Conference, will all tend towards uniformity of practice; and as builders become more familiar with the London system of measurement, and the public better acquainted with the nature and bearings of the questions as to the employment of surveyors, and both recognise, when such acquaintance increases, the special advantages to be derived from the adoption of one or the other system of employing them, architects and surveyors will find it to the interests of their employers to adopt a uniform practice."

This report was read to the meeting of Conference held June 14th, 1872, and after some discussion the Council was requested to re-appoint the committee with the view to a further report being submitted to the next Conference.

The committee was accordingly reappointed, and on June 8th, 1874, reported the steps taken to obtain further information and expression of opinion, and that they had no modification to suggest in their former report, which they again submitted for consideration by the Conference. The Council, however, thought fit, without communication with the committee, to append to the report the following note:—

"At a meeting of the Council of the Royal Institute of British Architects, held on Monday, the 8th of June, the above report having been received and discussed, it was 'Resolved,—That the Council of the Institute having carefully considered the report submitted by the special committee on the employment of surveyors, are of opinion that the principal suggestions contained therein, and which wholly originate from that committee, viz., the incorporation in one form or other of the quantities in a builder's contract, are so novel, and so much at variance with the existing practice, that the Council cannot advise the adoption of the report, and the Council feel that the whole question of the employment of surveyors demands much further consideration."

The report was discussed at the Conference, and on June 18, 1874, the following resolution was agreed to:—

"That the best thanks of the Conference be given to Messrs. Cates and Rickman for their care in the preparation of their report. That the report be received, and the Council of the Institute be requested to bring the matter before a future meeting of the Conference when further information on the subject may be accessible."

Beyond articles in the professional journals nothing further was done till, on May 19, 1879, Mr. John Honeyman, F.R.I.B.A., read in this room a paper on "Bills of Quantities and their Proper Relation to Contracts," in which he advocated the adoption of the Glasgow system, by which tenders are invited on somewhat speculative or approximate bills of quantities,—the work as executed being measured up when finished. This paper will be found in our Transactions.

On April 12, 1880, Mr. C. G. Saunders read before the Institution of Surveyors an excellent paper on "Quantities and Quantity Practice," and in the discussion which followed I ventured to submit for consideration a series of propositions which has been styled "The Surveyor's Decalogue" or "Charter," which I may here read, as being, under some heads, suggestive of subjects for discussion at these meetings.

*The Surveyor's Decalogue.*

"1. That when tenders are required from a number of builders for the erection of a building, it is essential that bills of quantities should be prepared in order that each of them may make his tender on identically the same basis.

2. That, in the absence of special instructions to the contrary, it is the duty of the architect to make the necessary arrangements for the providing of such bills of quantities.

3. That, for this purpose, the architect is the agent of his client, and the client is bound by his acts, whether cognisant or not of them, or of the custom.

4. That, until a tender is accepted, the client is liable to the surveyor, so appointed by the architect, for the amount of his commission and the expenses incurred.

5. That, on the acceptance of a *bonâ-fide* tender, the liability to the surveyor shifts from the client to the builder; the surveyor accepts the builder as responsible to him, and his right of claim against the client ceases.

6. That, if the work is abandoned before a tender is accepted, and contract entered into, the client pays the surveyor; if after, the accepted builder pays, and has his remedy against the client.

7. That, as a matter of convenience, it is the custom that the architect should include, and it is an obligation on the architect, so to include, in his first certificate, such reasonable charges and expenses of the surveyor; but the liability of the builder is not affected by this practice, and commences immediately on the acceptance of his tender.

8. That a surveyor employed directly and solely by the builder, without the intervention or concurrence of the architect, has no claim against the client, and must look for payment to those who employed him, and on whose instructions he acted.

9. That there are circumstances under which an architect may make himself personally liable to a surveyor, but they are of infrequent occurrence, and are not likely to arise with architects of any standing or repute.

10. That the surveyor is liable to the builder for proved inaccuracies or deficiencies in the quantities, and it is an obligation on him to prepare his quantities with the utmost care and accuracy, that the client may not suffer by excess, or the builder by want therein, and to fulfil his important duties with the strictest honour and integrity."

These discussions were followed, on November 22nd, 1880, by a paper by Mr. Francis Turner (barrister) on "The Law as affecting Quantity Surveyors," and to this valuable paper and the discussion thereon I refer those desirous of accurate information. It will be found in vol. xiii. part ii. of the "Transactions of the Institution of Surveyors," 1880–81, pp. 43–78.

The architects and the surveyors having thus discussed quantities, the builders, to whom, perhaps, the subject is of as much importance as to any one concerned, also had it brought before them at the meeting of the National Association of Master Builders of Great Britain, held at Bristol, July 27, 1880. Mr. Edward Hughes, of Liverpool, read a paper on "Bills of Quantities and Measuring Builders' Work"; this well deserves perusal.

There has thus been brought forward a large amount of information as regards practice, and numerous expressions of opinion,—frequently diverse, because based on different grounds; and the discussion to be held in this room should further advance knowledge on the subject, and enable us to arrive at some definite principles of practice.

There is but one more observation which I desire to make, the necessity for which I should gladly have avoided, but, considering the correspondence in some of the professional journals, it does not seem expedient to pass it by. From statements which recently were made to the Council with reference to the relations alleged to exist in some instances between architects and the quantity surveyors they employed, the Council considered it desirable to publish a declaration of their opinion thereon, and in No. 5 of the "Proceedings of the Royal Institute of British Architects," session 1880-81, December 2nd, 1880, such declaration was published, as follows:—

"*Sharing Commissions with Quantity Surveyors.*—It having recently been stated to the Council of the Royal Institute of British Architects that the charges made by quantity surveyors are sometimes shared by the architect, and such a practice, if it really exist, being open to great and obvious objection, the Council hereby publicly declare that, for the future, such practice, if proved, will be deemed conduct which, in the opinion of the Council, is derogatory to the professional character of any Fellow or any Associate of the Institute."

Any one who may desire to ascertain the full bearing and import of the declaration may refer to By-law XXIII., when he will fully appreciate it.

The subject may, in the discussion, be considered under the following heads:—

1. Is it desirable or expedient that architects should themselves, or by some person in their employ, supply quantities for works to be executed under their direction?

2. If the quantities are supplied by the architect, or some person in his employ, should they not form part of the contract?

3. In the like circumstances, should not payment for the quantities be made by the client direct?

4. Is it not the duty of the person who takes out the quantities to supply to the builder, at his request, and at his cost for copying, a certified copy of the dimensions on which the bills are based?

5. Is it not an obligation on the architect to include the amount of the surveyor's charges and expenses in the first certificate he gives to the builder?

MR. SIDNEY YOUNG'S PAPER.

Mr. Sidney Young next read the following paper on "The Relative Responsibilities of Architect and Surveyor in Relation to Quantities."

It is essential to every contract that there should be two parties to it, namely, the party agreeing and the party agreed with. In the subject under notice, the surveyor is one of those parties. Who is the other? It is either the building-owner or the builder, but I contend cannot be both at the same time, and I shall endeavour to show in what cases it may be either one or the other.

The well-known case of Moon *v.* The Guardians of Witney Union was a type of case in which the building-owner, by his default in failing to accept a tender, precluded the surveyor from obtaining his charges from the builder, and I venture to think that no one either in the profession or out of it, would question the righteousness of the decision. But, supposing a tender had been accepted, the surveyor could only have recovered his charges from the builder, and had the builder become bankrupt the day after his tender was accepted, the surveyor would (as I shall presently prove) have been in the happy position of one of his creditors; his remedy against the Guardians would have gone.

Now I would assert the proposition, and I believe it to be sound in law, that the surveyor is responsible for errors to the person with whom he contracts,—in other words, to the person who pays him, and, if the builder pays him, to the builder only can he be liable for errors in quantities. I do not know of a case in which a building-owner has ever sued a surveyor, who had been paid by the builder, for *excess* in quantities, in which he recovered; but cases the other way, in which the builder, having paid the surveyor, has recovered from him for *deficiencies* in his quantities, will present themselves to the recollection of many gentlemen here.

The War Department have, perhaps, employed quantity surveyors to a greater extent than any other body in the kingdom, and recognising, as I believe, the principle I seek to maintain, drew up a circular on the appointment of surveyors, in which they fixed the responsibility of those acting for them by paying them direct, and not allowing their charges to go through the builder. By this means they made a special contract out of the ordinary usage and custom, retaining the services of the surveyor on their behalf, paying him for such services, and looking to him for errors made against them in taking off the quantities; and I should contend that in a case like that the builder could have no claim against the surveyor for deficiency in quantities, for the simple reason that he (the builder) took the quantities with the knowledge that they would be paid for by some one else, and without any money or other consideration passing between him and the surveyor. But the War Department go further in their dealings with surveyors, for builders tendering are summoned to meet and appoint a surveyor on their own behalf to sit down with the War Department surveyor and prepare the estimate, and their, that is, the builders' surveyor, is *also* to be paid direct by the War Department. This would, I apprehend, make the builders' surveyor liable alike to the War Department and to the builder; for the surveyor *accepts* the appointment from the builders, and impliedly contracts with them that he will take out the quantities for them, though, *contrary to the usage*, he will receive his charges from another party. In cases like this only, I think, can a surveyor be in the unfortunate position of finding himself liable to both parties.

Formerly it was the practice for each builder to take out the quantities for himself, and that with more or less detail; but it subsequently was found more convenient to employ surveyors, to save the labour thus thrown upon builders, who have over and over again met and appointed surveyors to act for them, and this irrespective of any appointment by the architect. Could it be contended in cases of that description that any liability existed on the part of the surveyor to the building-owner? Now this method of appointing a surveyor was, from a builder's point of view, preferable, but it was attended with too much loss of time, trouble, and

inconvenience, and, moreover, there was a third party, the architect, who it was naturally felt was entitled to have something to say as to the appointment. The surveyor would have to go to the architect for the drawings and specification, and obtain from him the necessary information to enable him to do his work: hence it is obvious that a surveyor of respectability with whom the architect could arrange for the use of the drawings and specification, in whom he had confidence, and who was conversant with the peculiarity of his style, details, and methods of construction, would be the man before others to take out that particular architect's quantities; and the builders therefore virtually delegated the appointment to the architect, in effect saying, "For the purpose of our making our estimate we require a surveyor, who shall take out the quantities for us; but as our meeting together would involve a loss of time to many, and as, moreover, we might appoint a surveyor who would be distasteful to you, we leave the appointment in your hands, for you to name some respectable man, who will be satisfactory to us, and if any of us disapprove of him, why, such need not tender." This, I think, is really the way in which architects have acquired the appointment of surveyors; but I do not think that it the more makes the person so appointed anything else than the builder's surveyor, unless a special intimation be given to the surveyor at the time that he is to act for the building-owner, and to be paid by him direct. I am aware that surveyors, almost without exception, consider their appointment by the architect as an appointment in the interest of the building-owner,—in other words, that they are to take the quantities as closely and accurately as may be, and it is well that they should so regard their position.

It may be alleged against my argument that as the surveyor is thus indirectly appointed by the builders, he ought not to be able to recover against the building-owner in such circumstances as those referred to in "Moon *v.* The Witney Union." To that I would answer, that it is most proper he should have the privilege of doing so, and for this reason,—that the building-owner, after having by his architect asked for tenders, may, if he chooses, waver in his original intention, and thus be the means of having caused a great deal of trouble and expense to a person who has been engaged in performing an arduous duty, for the purpose of supplying him with particular and valuable information, viz., the cost of his intended house; and it would seem from the judgment in that case that the Court in this most reasonable light so looked upon the matter.

It is frequently said that surveyors must not shut their eyes to the fact that their charges, which are included in the bills of quantities, come out of the building-owner's pocket, and, therefore, that they are his agents and liable to him; but, if that is so, then are the merchants who supply the bricks, stone, and timber to the builder also in the same position, for the costs and charges of their work and materials are also set down in the bills of quantities, and likewise come out of the building-owner's pocket. Yet where is the building-owner who, passing over his builder, would make a claim against the timber-merchant who supplied the builder for that sappy or inferior timber had been introduced into the building?

I may, perhaps, be pardoned for here introducing a case in which I was the plaintiff, and to which I would otherwise be unwilling to refer did it not forcibly illustrate the principle of non-liability on the part of the building-owner. The facts as proved at the trial briefly were these:—

The defendant employed an architect, who, with his knowledge, instructed plaintiff to take out quantities for his house; plaintiff took out the quantities, tenders came in, plaintiff's charges were included in the summary; a tender was accepted (the defendant being shown the summary before the contract was signed, and being informed of the amount included for plaintiff). The work went on, the defendant requested his architect not to include plaintiff's charges in any of the earlier certificates, with the intention of keeping such certificates at as moderate an amount as possible. Work to the value of 1,400*l.* was executed, and certificates granted for 1,100*l.* The builder failed; defendant took the work out of the builder's hands, and employed another builder to complete. Previously to this the plaintiff had applied to the builder for his charges and (on being told they had not been included in any certificate), sued the defendant, on the ground that he (the defendant) had by design prevented the plaintiff from obtaining the charges in the usual way.

This case was tried in the Court of Queen's Bench on December 3rd and 4th, 1879, before Mr. Justice Field, who nonsuited me. Considering the injustice of the case, and the sympathy expressed for me by the judge, who found against me, I went to the Court of Appeal, where, on the 27th of May last, the case was heard before Lords Justices Bramwell, Baggallay, and Brett, who, after hearing my counsel, and without calling on the defendant's counsel, dismissed the appeal with costs. I, therefore, had the misfortune to assist this building-owner to obtain his tenders, to pay a considerable sum for lithography, and then to spend between 200*l.* and 300*l.* to find out that he did not owe me anything for my services.

Now, as the decision of the Court of Appeal in my case against Dr. Smith is to the effect that the building-owner is exempt from liability for surveyor's charges when the contract is signed with the builder, is it reasonable or equitable to suppose that any liability should exist on the part of one man towards another with whom the law says he has no contract by which he can recover his charges? Surely if A is not liable to pay B for work he has done, B cannot be liable to A for the manner in which he did that work.

I think I need say but very little as to the liability of the surveyor to the builder. In usual cases, i.e., those in which the charges are included in the summary and paid by the builder, the surveyor is undoubtedly liable to the builder for errors of omission or misdescription in his quantities, although the equity even of this might very well be questioned.

There is a case, Scrivener *v.* Pask, which was tried in the Common Pleas, in which the plaintiff was a builder and the defendant a building-owner. Quantities had been taken out by the defendant's architect, and the plaintiff, under the impression that the architect was the agent of the defendant, sued the defendant for alleged omissions in the quantities, but was non-suited; and on appeal to the Court of Exchequer Chamber, the decision of the Court below was upheld. In this case it would appear that the architect was agent for the defendant in so far as he acted as his architect, but not his agent in the matter of quantities, they having been paid for by the plaintiff builder to the architect acting in his capacity as quantity surveyor, and thereby a contract subsisted between the builder and the surveyor, by which the latter alone rendered himself liable to the former. In the judgment in the Court of Appeal, Mr. Justice Blackburn remarked, "To entitle the plaintiffs to recover they must make out three things,—that the quantity surveyor was the defendant's agent, that he was guilty of fraud or misrepresentation, and that the defendant knew of and sanctioned it. There is no evidence here of either of these things. If there has been misconduct on the part of the quantity surveyor, the plaintiffs have their remedy against him."

This very important case settled two points. 1. That if the quantity surveyor issued insufficient quantities, the remedy of the builder was not against the building-owner, but (said by Mr. Justice Blackburn) to be against the quantity surveyor. 2. That the quantity surveyor was not the agent of the building-owner.

In a very valuable paper on the law as affecting quantity surveyors, read before the Institution of Surveyors, Nov. 22nd, 1880, by my friend, Mr. Francis Turner, is a paragraph so forcibly illustrating by analogy the principle of non-liability on the part of the surveyor to the building-owner that I venture to repeat it here.

"It would be anomalous in the extreme if the building-owner, being neither liable to the quantity surveyor nor responsible for him, he could maintain an action against him. He would be like the plaintiff who sued the solicitor whom a testator had employed to make a will by which he would have largely benefited, had not the solicitor unluckily made a mistake in the execution which rendered the will inoperative, but who failed in his suit* because the solicitor had never contracted with him."

The case of Scrivener *v.* Pask, before alluded to, does something more than settle the two points to which I referred; it calls our attention to the practice, unhappily widespread, of the architect supplying his own quantities. It may be said that, as a quantity surveyor, I naturally join in the outcry against this system, but I would disclaim doing so on that ground, and say that my conviction is, from cases which have come under my notice, that the system is a most pernicious one.

It begins in secrecy. Where is the architect who in these cases faces his building-owner at the outset with the statement,—"You will have to pay me 5 per cent. for acting as your architect, and 2 or 2½ per cent. for acting as your surveyor"? I may, by way of parenthesis, remark, that the rule is the worse and more slovenly the quantities the higher the charge, and hence architects' quantities are generally sent out with a higher rate of commission affixed to them than are those prepared by surveyors. Well, having, or, as the probabilities are, *not* having, told his employer that he is going to take out the quantities, what does he do? In nine out of ten cases he delegates the work to a clerk in his office, a man who, as a general rule, can do everything,—survey dilapidations, prepare perspectives, take out quantities, make detail and working drawings,—a factotum who knows a little of everything, but a man who, I venture to say, cannot compare in point of intelligence and aptitude for this particular work with the surveyor whose training has always been quantities and nothing else. It may be urged by some architects that they *bonâ fide* take out the quantities themselves, and to this I would answer that if they do they cannot do it as satisfactorily as a surveyor would, and for these reasons,—1. If the architect be a man in large practice he would not be able to isolate himself from the more important branches of his profession, neglecting his clients, his works, and his drawings, and devoting long hours to the mysteries of "beds, joints, and plain faces." 2. If he be a man in small practice who urges that he has plenty of time at his disposal, no rich clients calling, important works to visit, or details to settle, I reply that, for that very reason, his opportunities of having acquired a knowledge of the profession of the quantity surveyor must be so limited as to suggest the desirability of his placing his work in the hands of some one who knows how to do it.

Say what quantity architects will, it is, after all, a question of £. s. d. with them,—a means of bringing them into a position in which they should never be placed, namely, that of receiving fees from builders whose work they have to criticise, control, and certify for. I hold that, in the matter of money transactions, the builder and architect should be kept at an absolutely unapproachable distance. There is also this further consideration: the architect being paid his fees as architect by the building-owner, has, or ought to have, a desire that his client should get the full benefit of his services; how can that be so, however, in cases where errors have been subsequently discovered as against the builder? The builder then has to settle them with Mr. Face-both-ways, and the probability is that the building-owner goes to the wall.

Then, again, builders (who have a right to be considered) do not like architects' quantities, and I believe that, if there were more cohesion in the building trade, such quantities would be returned, and the practice die out; but the jealousy existing among builders prevents their refusing to tender upon architects' quantities, and thus they grumble and continue as a body to tolerate a system which, as individuals, they dislike.

I can see every disadvantage as resulting from the practice of architects taking out quantities for their own works, whilst, on the contrary, the employment of the trained surveyor presents a distinct advantage to the architect, as, by the process of analysis brought to bear upon his work, the surveyor is frequently able to detect wants in detail or specification, and questionable points in construction, which have escaped the architect, and which he is glad to rectify before the contract is signed; it also presents another advantage in giving to builders quantities which they can understand, and know are prepared by an independent party, and it relieves the architect from the stigma which must attach to him when he takes money from the builder working under him.

There are many points in reference to quantities upon which I should like to enlarge, but which would extend this paper far beyond your patience, and so I will but briefly touch upon some of them.

The practice of architects sharing in the

* Robertson *v.* Fleming, 4 Macqueen's Scotch Appeals, 177.

surveyor's charges has already received practical attention at the hands of the Council of this Institute, and is so reprehensible that I need say nothing further about it except to express the hope that it is fast disappearing from amongst us.

Then, as to "making quantities part of the contract." This subject has been much canvassed of late, and is well worthy of full discussion, though it is a point upon which I do not think a hard-and-fast line can be drawn. There is, however, one event in which I am of opinion that quantities should form part of the contract, and that is when they are taken out by the architect. Some other cases occur to me in which it is also desirable, but as a general rule, they should not form part of the contract. The surveyor should so take out his quantities that he can stand to the correctness of them as a whole, and not desire to thus shield himself from responsibility for errors.

I should like to call attention, very briefly, to a class of advertisement which is being issued by the Commissioners of her Majesty's Works and Public Buildings, a copy of one of which is before me. It is as follows,—

"TO BUILDERS.—The Commissioners of her Majesty's Works and Public Buildings are prepared to receive Tenders for the Erection of a New Post Office at Manchester.

Persons desirous of tendering should apply at this office, where the plans, specifications, and a copy of the form of contract can be seen on and after Tuesday, the 1st of March next, between the hours of eleven a.m. and four p.m., and where also bills of quantities and a form of tender can be obtained on payment of the sum of 2*l.* 2*s.* The Commissioners do not hold themselves responsible for the accuracy of the bills of quantities, *which must be verified by the persons desirous of tendering*, nor do the Commissioners bind themselves to accept the lowest or any tender. The tenders are to be delivered before twelve o'clock on Tuesday, the 22nd of March, addressed to the Secretary, H.M. Office of Works, No. 12, Whitehall-place, London, S.W., and must be endorsed 'Tender for Manchester New Post Office.'

A. B. MITFORD, Secretary.

H.M. Office of Works, Feb. 22, 1881."

We have sometimes heard of the onus of proving the correctness of quantities being thrown upon builders by unscrupulous architects who, having taken out their own quantities and charged 2½ per cent. for them, are so frightened of their work that they compel the builder to sign a document to the effect that he has examined the quantities, is perfectly satisfied as to their accuracy, and that he relieves the architect-surveyor from all responsibility; but to think that after years of experience in the matter of quantities, the Office of Works should have at last woke up to the desirability of imitating such practices is astonishing, and I trust that builders will show they have some spirit left by not binding themselves hand and foot to quantities which have been taken out by some one in whose appointment they have had no voice. The Office of Works might have advertised that they disclaimed all responsibility for the accuracy of the quantities, and have left the builder to settle with the surveyor should occasion arise, but to cast upon him the burden of proving and approving quantities in this high-handed manner will not commend itself to the profession generally, or to the building trade.

I believe that all these matters would be greatly simplified and put upon their proper basis were surveyors recognised and paid direct by the building-owner, and I hope that steps will be taken to bring about so desirable an end.

And now, reverting to the former part of my subject, I desire to submit four propositions as illustrative of the responsibilities and liabilities of a surveyor. Before doing so, however, I must observe that the general position of all parties as they do, or rather ought to, exist, is very clearly set out in the "Surveyors' Decalogue," prepared by Mr. Arthur Cates, though I would, with all deference to that gentleman, venture to suggest that a clause should be added to it on "the responsibility of the surveyor to the building-owner," which responsibility has sometimes formed a very painful episode in the surveyor's history.

My propositions are these:—

1. An architect may employ a quantity surveyor to take out quantities, and if by default of the building-owner no contract is entered into, then the building-owner is liable to the surveyor for the charges (Moon *v.* Witney Union; Gwyther *v.* Gaze).

2. If, however, a contract is entered into with a builder, the contract to pay the surveyor's charges by the building-owner at once shifts to the builder, who only is then liable to the surveyor (Young *v.* Smith).

3. In that event, the surveyor is liable to the builder only for errors in quantities.

4. In cases where the building-owner employs and pays direct the surveyor, such surveyor is liable to the building-owner only.

### MR. ELGOOD'S PAPER.

The following paper by Mr. J. G. Elgood, of Manchester, was read by Mr. J. Douglass Mathews:—

*London Custom.*—The prevalent system practised in London of appointing two independent surveyors, one on behalf of the client and the other for the builders, is well understood, and does not call for particular remark; in large works it is obviously a good and equitable arrangement, and one which will continue to prevail; but in smaller works it seems unnecessary to divide the work and labour, and, I suppose, is not ordinarily done. The recognised charge appears to be 1½ per cent. (in addition to the cost of lithography), but this is by no means universal.

*Provincial Custom.*—The system above referred to does not prevail to any appreciable extent in the provinces, nor is there any recognised custom instead of it. Various methods (and want of method) and different practices are adopted to suit individual ideas or convenience; in some cases, perhaps the majority, architects take the quantities for their own work, and charge various rates from 1 up to 2½ per cent. according to their own notion of the value of the work, and almost invariably the charge is made in the bill, and paid by the successful contractor. In exceptional cases an independent surveyor may be appointed on behalf of the client and paid by him, when the arrangement assimilates itself to that usual in London, but it is mostly limited to the employment of one surveyor.

In *Scotland* an entirely different system prevails. In the first instance approximate quantities are taken out, and the bills priced, which serve as the basis of settlement at the end of the work, when the whole is remeasured. It is very important that a recognised scale of charges should be laid down for taking out, and in order to provide for the increased labour of small works, a sliding scale might be adopted, ranging from 1 per cent. for very large works, to 2½ per cent. for very small ones. One objection to the independent surveyor is that it brings in another authority between the proprietor and architect, in some cases giving him practically all the power in the settlement of accounts and money matters, which is not altogether a pleasant position for the architect, who in all other questions has power to determine in case of dispute or difference.

*Responsibility.*—All kinds of methods have been devised by architects and surveyors issuing quantities to protect themselves from responsibility, some very absurd, unfair, and inequitable. Most bills start with a heading disclaiming any liability for their accuracy, and in many cases throwing the burden of proof on the builder, who (though paying for the work being done) is required to check the accuracy of the calculations for himself, which is practically an impossibility. An example of this is given in an advertisement just issued to contractors for a Government work, the new Post-office at Manchester. I think the greatest mischief in connexion with this subject has arisen from the attempt to evade the responsibility. It is manifestly unfair, and would not hold good, in case of a dispute and matters being pressed to a legal issue; the result being that the subject is found too complex and technical to be settled in a court of law, and it is referred to arbitration, with usually a costly and unsatisfactory ending arrived at by the practice of "splitting the difference."

*Remedy.*—The only satisfactory remedy which occurs to my mind, after an experience of some years, and acquaintance with various methods of procedure, is to make, in all cases, the "quantities" *a part of the contract*, by whomsoever they may be prepared. This would render it of little consequence whether they were taken out and issued by architects themselves for their own works, or by an independent surveyor. It would prevent any liability of abuse, and be perfectly fair and equitable to both parties. Any inaccuracies would be adjusted at the final settlement of accounts, and a satisfactory result arrived at for both client and contractor. All might then be done fair and above-board. Payment being made by the proprietor direct, the builders would know they were secure of honourable treatment, and be able to price their work without fear of nameless and undefined pains and penalties. The objection raised is that the proprietor would not know what he is going to pay, but there does not seem to be any great force in it, and it might naturally be expected to make him more careful in selecting a competent man. A suggestion has been made in connexion with this subject, to obviate the objection which the leading London architects, and some provincial ones, of first-rate standing, have to taking quantities in any form, that the Associates might be allowed as at present to continue to do so, but that in future Fellows should be debarred. There can be no objection to this course if the present Fellows are willing, but if they cannot agree to do so at once, it might come into operation in 1882, at the same time as the compulsory examination.

### MR. MORHAM'S PAPER.

The following paper was read by Mr. Morham, the City Architect of Edinburgh:—

I have been asked to give information on the professional position of surveyors of builders' work in Edinburgh. It might be considered that questions relating to the profession of the surveyor, or measurer, as he is usually called in Edinburgh, could be best treated of by one of that profession. But in view of the special matters on which I understand information is chiefly desired at the present stage, namely, the relations of the measurer with the employer, architect, and builder, an architect may, on the whole, be in a better position to deal with the various aspects in that connexion than even a member of the profession under review. I have, therefore, though not myself a measurer, been induced to comply with the request made to me to give an account of these relations, as usually subsisting in Edinburgh, and with your leave shall now endeavour to do so.

In treating of the subject of quantities, more than one recent writer has made favourable allusion to the system prevailing in Edinburgh, or more generally in Scotland. But while such recommendations may be so far well merited, and our methods in certain respects worthy of consideration by our neighbours, it does not follow that our general practice is, to the extent which might be desired, the subject of a well-defined system, and, in fact, it is not so. Among Edinburgh measurers, indeed, there is a fairly uniform understanding on the subject, but no authoritative definition of their professional position, nor are its general principles and practice so well determined but that sundry changes are found from time to time working their way, while the system, such as it is, differs materially in some respects from those followed in other districts.

After careful consideration, however, I venture to think that, with certain modifications and improvements, the practice of measuring as followed in Edinburgh might eventually be found to contain the elements of an equitable medium between that system, on the one hand, which devolves all risk of error on the measurer, and that which, in an insatiable anxiety to invest in stone and lime, contents itself with an approximate estimate only, leaving the actual cost very doubtful until the building is completed. We hold it quite reasonable and proper that an employer should desire to be informed beforehand what an intended building is to cost, as planned, and that with due care this information is attainable to a fair degree of certainty; but, on the other hand, that except in respect of professional credit, it is inexpedient that the measurer should be liable for ordinary errors, which (though it would appear that in any work of considerable extent they cannot be altogether avoided even with the best practitioners) are yet, in schedules prepared with ordinary care, seldom of serious extent, and are as likely to be in the employer's favour as not.

In what follows I propose to state briefly the public qualification of our Edinburgh measurers; next, the nature of the common understanding of their professional position with regard to employers, architects, and builders, and then to offer a few remarks on certain matters of detail.

The measurer is with us a public official, and probably the only professional man who, though without salary or specific duties, holds his appointment from the local authority. His, in fact, is a public appointment, shared by an indefinite number of fellow officials. An aspirant to the dignity makes application to the authorities, who then remit to two surveyors of good repute to examine him as to

proficiency in the craft, and on their favourable report, he enters into a regular bond under penalty, to act honestly and fairly in all questions entrusted to him, and, having further taken the oath to be faithful in due form before the magistrate, he thus becomes an ordained surveyor, or, in more homely phrase, a "sworn measurer."

The various points in the measurer's professional relations, in connexion with such works he is employed on, may be summarised as follows:—

He is appointed on behalf of, if not by, the employer.

For general integrity, he is responsible to the public authority; in other respects, he is properly responsible to the employer.

He is, or should be, furnished by the architect with full documentary information sufficient to enable him to prepare schedules of the quantities of materials and work of the various kinds intended in the proposed building.

The fees for measuring and lithographing are added as special items at the end of the schedule, and included in the builder's estimate, and are usually payable from his first instalment.

The usual fee is one per cent. on the estimate, exclusive of the cost of lithographing schedules.

The accuracy of the measurements is not guaranteed.

The builder is required immediately on the acceptance of the estimate to furnish the architect with the priced schedule for the purpose of pricing extras and deductions, if any should occur. The amount of these is ascertained and certified by the measurer, who usually also applies the prices, and extends the account, charging along with it, in a separate item, his own remuneration for this additional work, according to the trouble involved, and receiving it afterwards from the builder.

Total remeasurement of the work as executed is only resorted to in cases of extensive deviation from the contract plans.

Some architects, either under their own hand, or by employing qualified surveyors in their offices, prepare their schedules for their own works, but this system is not generally viewed with favour, nor extensively practised.

Proceeding now to refer somewhat more in detail to certain of these points, I would remark:—

Firstly, with regard to the appointment of the measurer: Though in most cases he is appointed by the architect, it is understood to be on behalf of the employer, who otherwise may, if he think proper, exercise his prerogative, and himself nominate the measurer; but the nature of the measurer's duties is generally so little understood by employers, that in most cases the choice is left to the architect. It is quite unusual, in general practice, for the builder to have any voice in the appointment of the measurer; indeed, the idea of anything like a meeting of intending estimators is contrary to the spirit of the locality, the tendency being rather to keep the names of competitors a profound secret from the others, for the purposes not only of preventing collusion among them, but also of securing the measurer's independence, and freedom from risk of undue interference; and, in the course of an experience extending over a good many years, I remember of only one case, and for it there were special reasons, in which the intending estimators were invited to meet and appoint the measurer.

Notwithstanding this non-participation of the builder in the appointing, it used to be contended that the measurer is the builder's servant, and it is not difficult to see how this view has originated. The principle, indeed, is still acted on in contracts taken by H.M. Commissioners of Woods and Forests,—no mean authority,—but in all other ordinary practice it has become nearly, if not quite obsolete, and, though the fees are paid by the builder, it is only the very ignorant who do not know that he first receives them from the employer.

*Responsibility.*—As regards responsibility for the accuracy of the schedules, it used formerly to be provided in the specification that contractors would be held to have satisfied themselves as to the accuracy of the measurements, and that no after-claims on account of errors in the schedules should be entertained. This was, of course, with the intention of divesting the employer of responsibility, and the builder had thus to choose between running the risk of the schedule being incorrect, or incurring the expense of a second measurement to check the first. In the vast majority of cases the builders preferred to run the risk, and take their chance of over-measurements to counterbalance omissions; but as omissions somehow usually impress themselves on the builder's observation as the work goes on in a way which over-measurements entirely fail to do, it not unfrequently came to be that the builder declined to abide by such provisions, and the Court when called on to interfere decided that the builder could not reasonably be held responsible for inaccuracies in the measurer's work. The measurer not being responsible, except with his professional credit, the risk thus devolves on the employer, who, of course, is entitled on the other hand to a deduction in respect of over measurements, provided these are duly seen to on his behalf. The risk must lie somewhere, and it is considered with us that, on the whole, the fairest course is to let it lie with the employer, and that the system of paying the measurer a larger fee in respect of his taking the risk is open to very serious objections. This rule, however, is not so binding but that a measurer may, if he thinks proper, voluntarily make good the defects of his work, and a case occurs to my recollection in which a firm of measurers having discovered a serious under-measurement in their schedules after the contract was taken, of their own accord paid for the deficiency. It may be left to the moralist to say how far they were right in the abstract, but pecuniary self-immolation is in our northern climate a plant of such rare growth, and has such a strong flavour of virtue, that ordinary criticism is disarmed in its presence. Such occurrences are, however, not common, and I record this case rather for example than for precept.

Some of our measurers take care to add to their schedules a note that the quantities are *not guaranteed;* others annex the mystical letters "E. E.," which being interpreted mean "Errors Excepted, or even more astutely, "E. & O. E,"—errors and omissions excepted; but these precautions are of no avail in devolving liability on the builder; and even where they are not taken, the builder is no longer, as a rule, held liable for the accuracy of a document he has had no hand in preparing, or even ordering, while I am not aware of any case in which the measurer has been found liable in law for defects in his measurement. Of course, where gross carelessness or intentional untruthfulness could be demonstrated, the case would be different; but, as a rule, the measurer is responsible for his errors to the employer, but that only with his good name.

Passing on to consider the assistance given to the measurer by the architect, it may be remarked that where proper drawings and specifications are supplied, the measurer can prepare his schedules with little or no further reference to the architect.

There appears, however, to be a growing dislike on the part of some of our architects for specification writing. Some prefer to give detail drawings with copious notes and only a general specification. There can be no objection to this, provided the information given to the surveyor be adequately placed on record.

Others, whether from want of time, or some less excusable cause, take the free-and-easy plan of giving the measurer only general drawings, or, it may be, mere rough sketches, and perhaps a few verbal explanations, leaving him for the rest to his own resources; but they usually forget to deduct from their own fees, and hand over to the measurer, the just proportion thereof pertaining to the work they thus devolve on him. I have heard complaints by several measurers on this subject, and the habit appears to me most irregular and even unfair, and looks very like an unwarrantable advantage taken of the measurer's position, the possibility of which it should be one of the aims of a well-established system to preclude.

Well-matured plans and specifications are indispensable in some form or other for an accurate estimate, as well as for the proper execution of the work, and are clearly part of the architect's duty, that of the measurer being to supply information to estimators of the quantities and description of materials and work required, as set forth in the architect's plans and specification. If, however, it is found that an experienced measurer can make his schedules answer for the specification with less trouble than it takes the architect to prepare one in the old way, by all means let it be so, but let the remuneration be regulated accordingly. Otherwise, let such architects say openly that they value their own services at a higher rate than that fixed by the Institute.

With regard to the relation of the measurements to the contract, at no very remote date it was the rule expressly to exclude them, except for the purpose of valuing extras and deductions, and make the contract otherwise refer to the plans and specification only. The first general condition of contract in the Edinburgh rules as to the measurement of masons' work,—which are favourably noticed by Mr. Banister Fletcher in his book on Quantities,—is, however, aimed directly at this view, and provides that the contract is to be based on the schedule; and it is now usual for contractors expressly to limit their offers to the extent of the schedule of measurement. Of course, where the schedule is also the specification, this limitation cannot, with any show of reason, be denied; but even where a separate specification is provided, there seems no good reason why the schedules of measurement should not also be embodied in the contract, especially where the principle of holding the builder liable for inaccuracy in the measurements is no longer maintained.

*On the Subject of Remuneration.*—One per cent. must sound to those accustomed to a higher rate rather bare remuneration, even where, as with our measurers, the quantities are *not* guaranteed; and between growing demands by the builders for detailed information, and such exactions, by certain architects, as those before referred to, there are indications of a feeling of discontent with the old rate, further fostered, no doubt, by rumours of considerably higher rates paid in some other places, even though those higher rates do embrace liability for errors. For additional work there should, in fairness, be additional pay, and if, as I believe, the fuller analysis demanded by the builders tends to the employer getting his work more nearly at cost price, an increase of remuneration on this ground should be willingly accorded. But care should be taken to distinguish between work arising out of new exigencies of trade, and such as may be simply demitted by the architect. A well-considered system for general adoption, such as it is the object of this Conference to establish, would, no doubt, greatly tend to the satisfactory settlement of such questions. On the whole, our system of measuring has hitherto been found to work well, our measurers being, as a rule, regarded with confidence both by architects and builders, and by such employers as know anything about them,—and that no less with respect to general accuracy than to upright dealing between parties. Though the practice of ordination by the public authorities may appear somewhat antiquated, I believe it has a salutary effect both on the measurer and on his employers. Nevertheless, there is room for improvement, and the establishment of more definite principles for general guidance could not fail to have a beneficial effect. The absurd system of including the measurer's fee with the builder's estimate is quite unworthy of any liberal profession. Employers should be frankly informed that where foreknowledge and limitation of cost are of importance, the measurer's assistance is indispensable, and his charges should be rendered in a separate account. The mere mode of paying fees may seem a trivial matter, and it may be said to be of little importance whether employers understand about it or not, provided they are not made to pay more than they ought. But even allowing that hitherto no serious abuse has resulted, the practice is inconsistent with sound principles; and indications are not wanting in some quarters of an inclination to take advantage of the comparative security from observation to be found in the mazes of a schedule of quantities to slip in items which properly form no part of the builder's contract price; and I cannot refrain from taking notice here of a paragraph which appeared a few months ago as to a firm of measurers of good standing in Edinburgh having introduced into their schedules large items for copies of drawings furnished to the contractors and for services connected with the Clerk of Works department. Such practices, I take leave to say, are a complete innovation in Edinburgh, and, even if done with the employers' full knowledge, are unsound in principle, and fitted to lead to serious abuses. If done without the employers' knowledge, I refrain from giving them their proper name.

It is just possible, however, that in the particular case referred to, satisfactory explanations

might be given. I do not know, and therefore cast no imputation further than to say that the thing does not look well.

Assuming, however, that it is the object of such conferences as this, not only to see that professional services are fairly allocated and adequately remunerated; but that every reasonable means are taken to eliminate practices and principles which may lead to unjust dealing, even though it could be shown that they have not hitherto resulted in that way, I conclude by wishing all success to the labours of the Conference.

MR. ROBERT SCOTT'S PAPER.

Mr. Robert Scott, of Glasgow, read the following paper:—

The mode of dealing with quantities in Glasgow and the West of Scotland may, in contradistinction to all others, be denominated the "after-measurement system."

The surveyor or measurer, as he is locally designated, is usually employed by the architect on behalf of the proprietor or building-owner, as parties proposing to build for the first time are not always aware of the existence of such a profession as that of measurer until informed of it by their architect, although it would seem that in recent years the general public must have been greatly enlightened in this respect, as not a few cases have occurred where the appointment of measurer has taken place before that of the architect.

The prevailing mode of procedure may be briefly stated as follows:—

The architect having prepared his general and detail drawings, puts them into the hands of the measurer, along with a complete specification of the several works, or, failing such specification, with such notes and verbal explanations as are necessary for enabling the measurer to interpret the drawings correctly, take out the quantities of and specify minutely the materials and labour required for the execution and completion of the building according to the drawings.

In the event of there being no detailed specification prepared by the architect,—and such is frequently the case,—the specification of materials and labour, and the conditions of contract, are either embodied in or appended to the "Schedule" or "Bill of Quantities." With reference to the measurement of the work after its execution, the conditions of contract usually contain the following or some similar clause, viz.:—"The work will be measured when finished, and, whether more or less than now estimated, will be valued by the rates contained in this schedule or by others in strict accordance therewith, and in proportion to the sum in 'Letter of Offer.'"

The "Tender" or "Letter of Offer" is affixed to the "Bill of Quantities," and is in the following, or similar, terms:—"—— hereby offer to execute the —— work of building proposed to be erected ——, according to plans thereof by ——, architect, now shown, in conformity with and to the extent of the annexed schedule, for the sum of ——."

The acceptance of this offer by the architect on behalf of the building-owner, in writing, usually constitutes the sole contract, as it is only in rare instances that a legal and formal deed of contract is entered into by the contracting parties.

In making the after-measurement of the work, the measurer visits the building and takes his dimensions as often as may be necessary for obtaining access to and the proper examination of the work, and thereafter prepares the final measurements, all in accordance with the principles and spirit of the schedule, which is the basis of the contract.

The measurer having completed the final measurement, it is handed to the contractor, who renders it to the architect by whom it is examined and, if found satisfactory, the architect grants a certificate for the balance found due after deducting the total amount of certificates previously granted.

In bringing this system under the notice of this conference of professional and practical gentlemen, I cannot hope that it shall receive consideration at your hands unless it can be shown that it is equitable, suited to the requirements of building contracts, and conducive to amicable settlements.

This system of after-measurement is certainly the most equitable that could be adopted, as under it the building-owner pays exactly for what he receives, neither more nor less, and the contractor gets payment for every iota of work which he executes and which he can reasonably claim; and it is no advantage for the contractor to scrimp the work, as any saving that may be effected by so acting does not add to his profit, as might be the case under a lump-sum contract; while, on the other hand, the contractor runs no risk of being required to perform any work without due remuneration.

In lump-sum contracts, where the tender has been made on a schedule prepared by a measurer, the contractor is the only party in a position to test the accuracy of the quantities as measured from the drawings, the ordering of the material for the work being an unquestionable test; and it is but natural to suppose that he will detect omissions and insufficient quantities more readily than excess in quantities, as it is only the former that concern him.

As an illustration of this, it was only this week that I had a visit from a contractor for plaster work, who does a large business under lump-sum contracts, and on my inquiry as to how he got on with such contracts, he replied that they were very unsatisfactory; it was invariably one of the conditions in the schedule that he had to satisfy himself as to the accuracy of the quantities, which it was generally impossible to do, previously to his tendering; but that he usually ordered one ton of lime shells for each hundred square yards or nine squares of work, and if this proportion of material was sufficient for the work, he considered the quantities stated in the schedule sufficient, and he had often a quantity of material to remove after he was finished, although sometimes he required more material, and in that case he believed himself to have been victimised.

I have had occasion to measure up the extras on a lump-sum contract, and my experience was that, while the contractor was very punctilious in pointing out and claiming extras, it was left for me to discover in what respects and to what extent the work specified and included in the schedule had not been executed, and I have no hesitation in stating that the measuring up of the whole work could have been done in about the same time, and would have given more satisfaction to all concerned.

During this year I have been employed to measure up the extra underbuilding on a large contract which is being executed for a lump sum, and the ascertaining of the amount of extras entails the measuring of the whole work as executed, and of the contract drawings, and the comparison of the one with the other, which simply makes double labour.

Some have objected to this system because they say it is impossible under it for a building-owner to count the cost before he begins to build. Well, it has been demonstrated over and over again in the practice of Glasgow measurers that a building-owner can count the cost before he begins to build provided he determines beforehand what he shall build and what it shall be built of. And it shall not be contended that an owner building under a lump-sum contract can know exactly what he is to pay until the building is completed, if he is continually changing his mind and making alterations on, and possibly additions to, his plans.

From experience I can state that in cases where the plans have been generally adhered to, it is no unusual thing for the amount of the after-measurements to be within one or two per cent. of the contract sums. Of course, I have also had them turning out much larger in amount than the contract, and very properly so, because the owner only discovered what he would like to have when the work was in process of execution, and altered and added to the work to suit his new and enlarged ideas; and in such cases occurring under a lump-sum contract, the preparation of the bill for extras would certainly be as laborious an undertaking as re-measuring the whole work.

Besides enabling the building-owner to count the cost before he begins to build, the schedule being generally prepared in such a form that the work appears therein as nearly as possible in the order in which it will be executed, serves as a reliable guide to the architect in assessing the value of work executed, and to the contractor in calculating what he is entitled to be paid when the work has reached the several stages at which it has been arranged that payments shall be made.

Further, this system of after-measurement is convenient in cases where it is necessary to proceed expeditiously with the erection of a building, as the bills of quantities can be prepared and contracts entered into so soon as the architect has completed his general drawings and decided generally on his details; as he can during the progress of the work study and complete his details without fear of being met with a demand for an extra if he varies from a line by a hair's breadth, as both he and the contractor know that it will be measured as executed, and charged accordingly.

Again, the whole work being measured as executed, the possibility of disputes about extras is reduced to a minimum, as there can be no difference of opinion as to what should be charged as extra, the only points to settle being as to the value to be put upon work executed, and for which prices cannot be found in, nor deduced from, the schedule; and such points likewise arise in connexion with bills of extras on lump-sum contracts. The customary method of dealing with prices for extras is for the contractor to price them, and his prices are filled into the measurement in red ink, to distinguish them from prices taken from the contract; and they are either passed or adjusted by the architect when the measurement is submitted to him for examination.

Out of over 1,100 contracts for which I prepared the schedules, I have had only one instance in which these prices were not adjusted between the architect and contractor, and that, the instance under a lump-sum contract already referred to.

Having thus briefly endeavoured to explain and uphold this system of after-measurement, I trust I have been able to put it in such a light as will commend it to your consideration in the discussion of this important subject of "Quantities," and I am hopeful that in any future conference on this and kindred subjects, Glasgow will be represented by an abler exponent of the practice prevailing there, and one appointed by the Glasgow Institute of Measurers.

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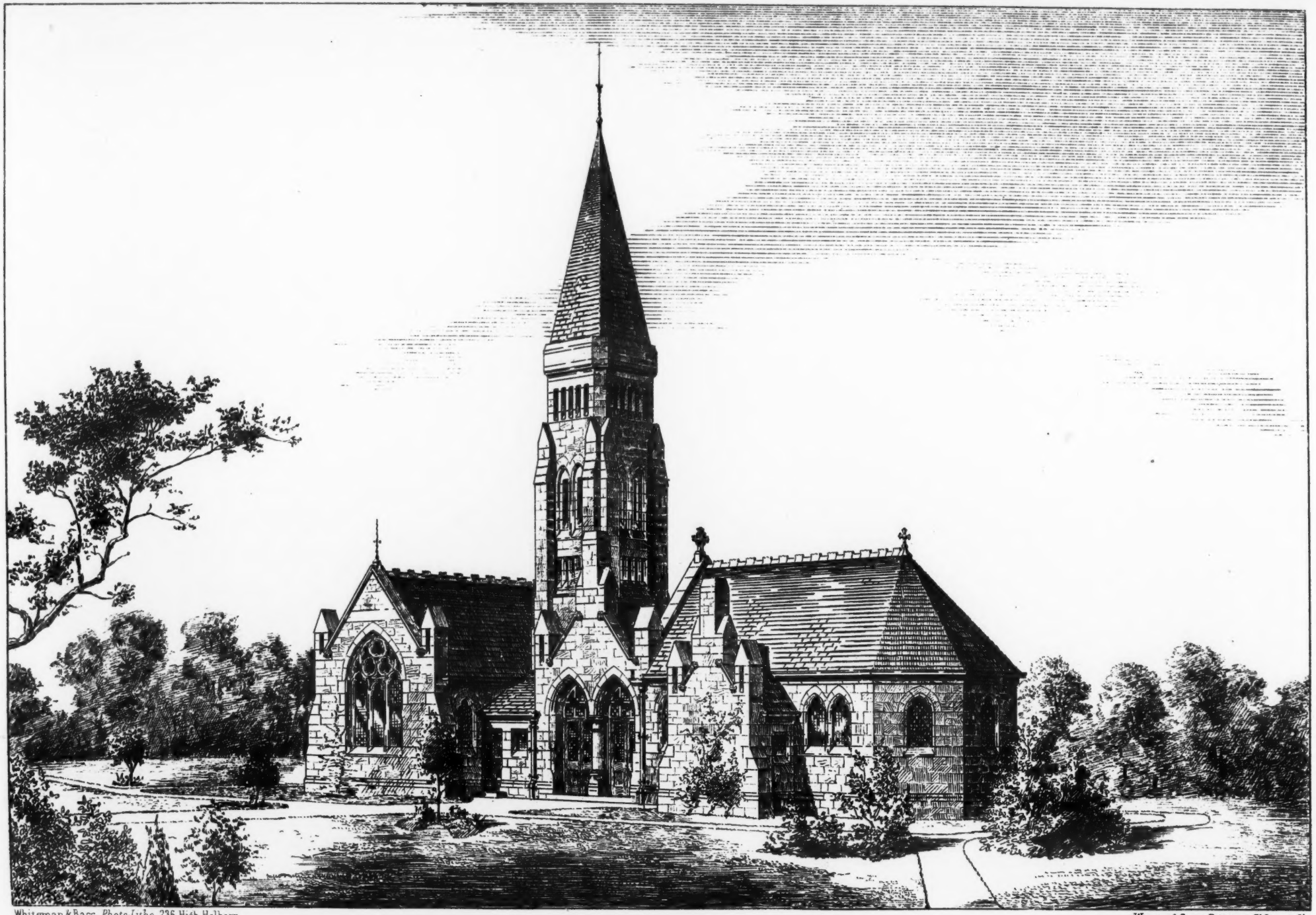
DISCUSSION.

Mr. J. A. Picton, of Liverpool, said he had had in his time a great deal to do with quantities, both as a taker-out of them in the early part of his professional career, and, in later years, as the architect of buildings for which quantities had necessarily to be taken out by others. He had paid a great deal of attention to the subject, and would give, in as few words as possible, the conclusions at which he had arrived. The subject could be looked upon from two points of view,—Firstly, What is right in principle? Secondly, What is practical? Looking at the question, firstly, in the light of right and justice to all parties, and assuming that proper skill and care were exercised in taking out the quantities, and that there was good faith all round on the part of the parties to the work, he thought it would not be difficult to arrive at a satisfactory solution of the difficulties of the question. What was a bill of quantities? It was simply an admeasurement taken before a building work was done, just as a measurement bill was a measurement taken after the work was done. Now, if proper skill were exercised, it ought to be as easy to measure a building before it was erected as afterwards, and if that were so, it was difficult to see any reason why the quantities should not form part and parcel of the contract as something which could be relied upon by the builder and the building-owner as a *datum* from which any alterations, additions, or omissions could be calculated satisfactorily. He could not see how any objection could fairly be taken to the adoption of such a course. Objection to it could only arise, as it seemed to him, from two causes,—firstly, from greed, and secondly, from incapacity and a wish to avoid responsibility. He had known of cases,—and the chairman in his remarks had made some reference to the pernicious practice,—where the architect had shared the commission paid for quantities. Under such circumstances could it be wondered at that blunders should occur and that misunderstandings should arise? These were evils which arose from greed and incompetence combined. He had no objection, under certain circumstances, to the architect of a building,—or some one in his office in whom he had perfect confidence, and who was responsible to him,—taking out the quantities for his buildings, although, all things considered, it was the better course where possible to have the quantities taken out by an independent quantity-surveyor. Still, it might not be a matter of much consequence by whom the quantities were taken out if they were



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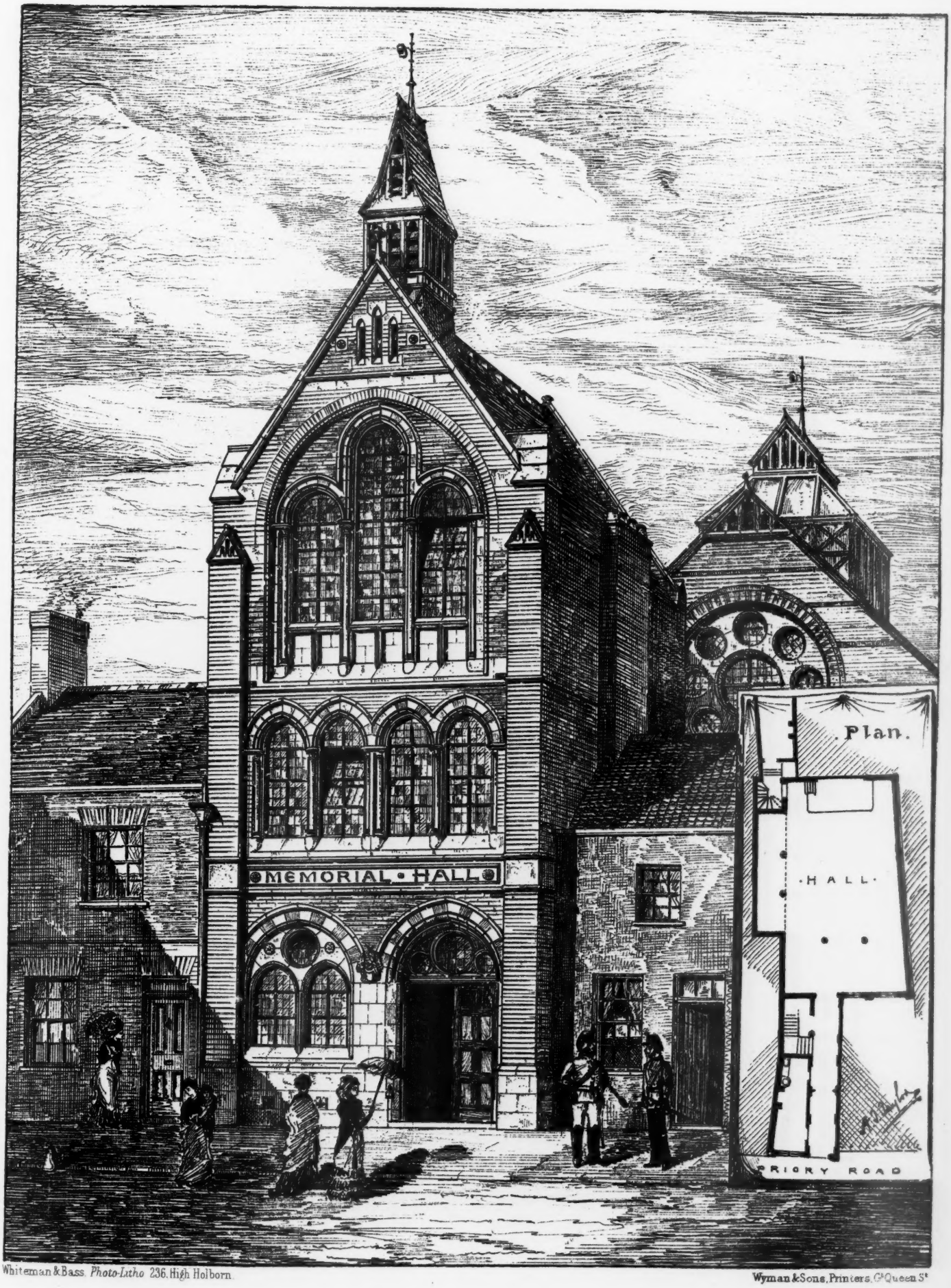
**CEMETERY CHAPELS, HORSFORTH, NEAR LEEDS.——MESSRS. HOLTOM & CONNON, ARCHITECTS.**

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**MEMORIAL HALL AND SCHOOLS, DOVER.——Mr. Andrew T. Taylor, Architect.**

THE QUILTER MAY 14 1904

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THE NEW UNIVERSITY BUILDINGS, EDINBURG

BURGH.—Mr. R. Rowand Anderson, Architect.

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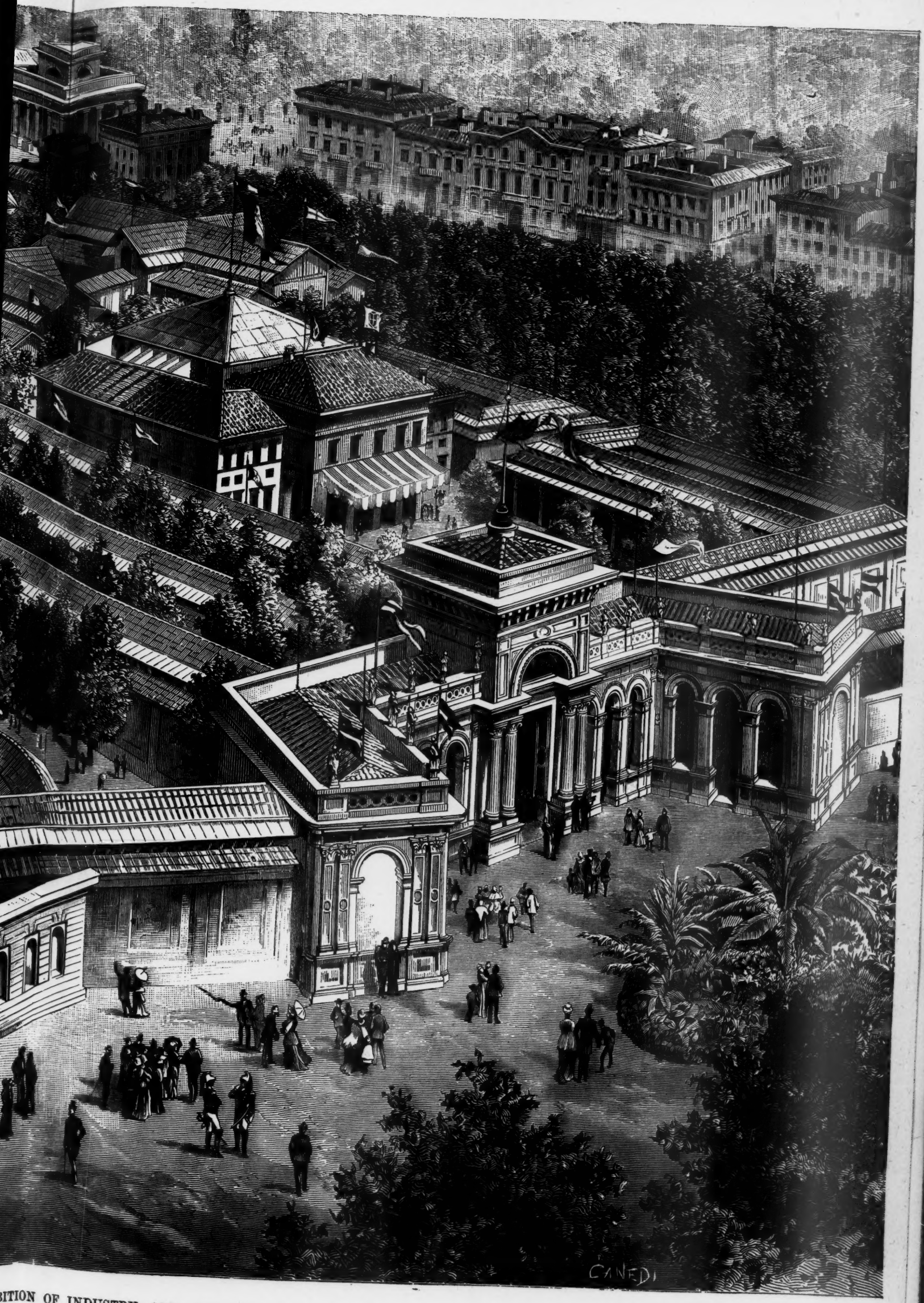
NEW BUILDINGS FOR THE NATIONAL EXHIBITION




BITION OF INDUSTRY, ART, AND COMMERCE, MILAN.

acknowledged and accepted by all parties to the contract. With regard to the sharp practice of the War Office in requiring builders to verify the quantities upon which they tendered for public works, they might just as reasonably be required to take out the quantities themselves. Under such a condition as that named in the advertisement read, of what possible benefit could the quantities be to persons tendering? The imposition of such a condition seemed to be a very discreditable way of shirking responsibility on the part of a public department. Of course, the quantity-surveyor, like any other professional man, might properly be expected to bring a fair amount of capability to the performance of his work, but the best of men were not infallible, and it was quite possible for mistakes to occur even in the work of the most skilful and careful men. He would suggest that it might be a good practice to adopt if quantity-surveyors would undertake to prepare quantities for buildings at 1 or 1½ per cent. under the ordinary conditions, i.e., "errors and omissions excepted," exercising all possible care to ensure, but not guaranteeing, the accuracy of the quantities; while they might, on the other hand, say,—"Give us 2½ per cent., and we will guarantee the accuracy of the quantities," the extra payment in the shape of commission being, in fact, a sort of insurance premium. That might seem to be a fanciful remedy, but it was only suggested as one possible means of surmounting a difficulty. With regard to the person who actually paid for the quantities, he thought it would be the best for all parties if the business were conducted in a perfectly straightforward and above-board manner. If the employer or building-owner were straightforwardly told at the outset that he would have to pay a commission for the preparation of quantities, in addition to the architect's commission, and if the quantities were made a part of the contract, a great deal of misunderstanding and disputation would be saved, and, in the event of difficulties arising, they would be much more easily settled than was now generally the case. The practice of making the quantities part of the contract was a growing one in Liverpool and its neighbourhood, and he hoped to see its wider adoption. Under the present system of working there was too frequently manifested a "pull devil, pull baker" spirit between architect and quantity surveyor, each of whom sometimes tried to get the better of the other. There was one practice on the part of architects which could not be too much reprehended, viz.,—the throwing of much needless uncertainty as to the nature of the details of a building on to the builder, by not delineating them on the drawings, whereby the builder was unable to realise the exact intention of the architect, and therefore was unable to calculate their cost. With regard to the Glasgow system of re-measuring work, it was no doubt a very excellent plan to adopt, but he (Mr. Picton) was not sure whether it would meet with general acceptance. He thought employers might, in some instances, object to it, and would say, in effect, to the architect,—"We expect you, as the architect, to inform us at the outset as to the exact cost of the building." The Glasgow system was, however, a very excellent one. On the whole, he did not think that there was any question of greater importance at the present time to the architectural world than that of the desirability of settling this question of quantities on a right and just basis. The excellent papers which had been read threw considerable light on the subject, and he trusted that the Conference would be able to arrive at or to facilitate a satisfactory solution of the question.

Mr. Goddard (Leicester) said the practice of his firm was to have the quantities for their works taken out in their own office, they being responsible to the builders for their accuracy, but charging a somewhat higher commission than 1 or 1½ per cent. for them. It had been the practice for his firm to take out their own quantities ever since it had been necessary to put up works to competition, and they found that, as a rule, clients did not object to pay the cost of preparing quantities when the necessity for doing so was explained to them. On the part of the Leicester Society of Architects, he promised to give all possible aid in the solution of the question.

Mr. Randall (Shrewsbury) said his practice was similar to that of Mr. Goddard. He had always taken out his own quantities, and it was necessary that provincial architects should do so.

Professor Kerr said it struck him that there was a very marked contrast in principle, as well as in practice, between the Scotch mode of procedure and that followed in England; and he must say that, with all due love for his native land, he did not think that the Scotch method could be satisfactorily pursued in England. The late Thomas Carlyle had told us that England contained thirty millions of people, "mostly fools," while everybody knew that Scotland had a population of only four millions, with very few fools indeed. It should be remembered that the manners and customs of the two countries were different, and in view of this fact, it would, he thought, be unwise to suppose that in England, with its wider associations and more varying circumstances, we could advantageously confine ourselves to the peculiarly strict mode of doing business which was pursued in the North. He did not think that an army of "ordained surveyors" would be a success in London. We had hers, it was true, such beings as "chartered accountants," but he (the Professor) was inclined to think they were officials of Scotch importation, and, indeed, animals of the same species as "ordained surveyors." The practical manner in which Mr. Picton had handled the subject was well worth emulation. By all means let it be taken for granted that there was honesty all round; why should it be supposed for one moment that there was anything else? He sincerely believed that half of the ill-feeling that had been engendered in reference to the subje t had arisen out of the supposition,—entirely gratuitous,—that there prevailed on all sides a spirit of bad faith. His experience was entirely opposed to the reasonableness of such a supposition. When a client came into his office and wanted a building erected, he was frankly told that he would have to pay, besides the ordinary commission to the architect on the cost of the building, a commission to a surveyor for preparing the quantities. He could not conceive of a case in which the client was uninformed of the fact that he would have to pay for quantities. Supposing, then, that there was honesty all round to begin with, the architect's function was, in part, to see that such honesty was maintained. An architect might be said to be responsible to the builder for the honesty of the client, responsible to the client for the honesty of the builder, and, it was to be hoped, he was responsible to both for his own honesty. Mr. Young's paper, it seemed to him, proceeded too much upon the assumption that all quantity-surveyors were always honest. With all deference, he did not think there was good ground for so broad an assumption. He saw one gentleman, a quantity-surveyor, in that room, against whose integrity not one breath could be whispered; and he saw another, and another,—and he had no doubt that of the great majority of the members of the profession the same thing could be truly said; but, at the same time, there were men in the profession,—as there were men in all professions,—who were not to be trusted, and in discussing this question it should not be forgotten that the architect was to a certain extent responsible to the client for the honesty of the quantity-surveyor.

Mr. Rickman said he had hoped to have had an opportunity of further consideration of the papers read before speaking upon them. He had been, as they knew, a measuring-surveyor for a long period, and he found the position of measuring-surveyors changing from year to year. At the time these discussions on quantities were commenced, ten or twelve years ago, at the first Conference of Architects, a certain amount of information which had been referred to by the Chairman had been gathered, but since then times had changed, and with the change of times quantity-surveyors and, to a certain extent, the nature of their work, had changed. With regard to builders, there were three classes of them with whom architects and quantity-surveyors had to do. Firstly, there was a certain class of builders who would do their work well for whatever price they had agreed to do it. There was a second and a very large class of builders who would do their work well or indifferently according to whether they were well or ill paid for it; and there was a third class of builders who could not do their work well however they were paid. Where the architect, builder, and surveyor did their work properly, matters would go on smoothly, especially where the quantities were part of the contract. Casual errors would be easily detected and adjusted in the settlement of the accounts, and architects, surveyors, and builders would stand better as business men in the eyes of the public.

Mr. Geo. Fowler Jones (of York) said that at the outset of his career he was very much opposed to having anything to do with quantities; but he soon found that it was necessary in the country, in order to get anything like proper estimates, to provide quantities. Having been brought up in a London office, he procured from London a quantity-surveyor, who prepared the quantities for works submitted to competition, but the experiment did not answer, for the local builders did not know the surveyor, and therefore would not trust him. When he first set up practice in York it was very difficult to get a whole tender for a building, the custom being to procure separate tenders for the different trades. He had tried the Scotch method of getting out approximate quantities, so as to get at an approximate estimate of cost, measuring up the works when completed. That method saved a great deal of trouble in the matter of settling for omissions, alterations, or additions; but there was the objection to it that the employer did not and could not know at the outset exactly what his building would cost. After a time he adopted the plan of having the quantities prepared by a surveyor in his (Mr. Fowler Jones's) own office, and under his own superintendence. He had always told his clients that there would be an extra charge for quantities, and they had always paid it. He had carried out that method of practice for the last twenty years, and had found it to work fairly well. He agreed in thinking that, as a rule, the quantities should be the basis of the contract, together with the drawings and specification.

Mr. Francis Turner, barrister-at-law, said he would have preferred to postpone his remarks on the subject until a later period of the Conference, but he was not quite sure he should be able to be present. With regard to the quantity-surveyor's position and the work which he had to do, it was quite true that the recognised legal position of the quantity-surveyor started from the case which Mr. Young had described as "the quantity-surveyor's sheet-anchor," in which case the quantity-surveyor established the liability of the building owner to pay him for work which he had done. It might seem rather startling that an action was necessary to establish such liability, for if the building owner desired to be correctly informed of the cost of the work, and with that view caused to be employed a quantity-surveyor, the presumption would rather be that the building-owner and not the builder was liable to pay him. That case was, he thought, decided in 1833, but before that the custom as now established and recognised by that particular case, must have grown up, and the quantity-surveyor must have looked to the builder as the person from whom, under ordinary circumstances, he was to receive his remuneration, and from whom he did receive his remuneration whenever a contract was entered into. The circumstances under which that case came into court were that before a contract had been entered into, but after the bill of quantities had been prepared, the building-owner changed his mind. The decision in that case had been pretty freely acted upon, and not long ago, in a case tried at Guildhall, a building-owner who was sued by a quantity-surveyor professed to have heard nothing of the custom of preparing quantities for a building. The judge and jury were against him, however. The case to which reference had been made had had some unexpected results upon the position of the different parties interested in building operations, because, from the fact that when a contract had been entered into the builder was the person who had to pay the quantity-surveyor, it seemed to follow logically that the builder was the only person who could complain of the quantity-surveyor not doing his work. He did not think that many professional men would like to work under such liability to serious consequences at the hands of people upon whom, to a certain extent, they were dependent. The position of a quantity-surveyor did seem to be, in some respects, open to grave objection, especially when he happened to be the architect of the building for which he prepared the quantities. He (Mr. Turner) had so frequently had the pleasure of coming into contact with members of the architectural profession, and had invariably had so much reason to admire their rectitude and ability, that, in adverting to the objections to the relations which sometimes subsisted between architects, quantity-surveyors,

and builders, he should not be misunderstood as making any imputation upon the body of the members of the profession. The architect who acted as quantity-surveyor to his own buildings, and who was paid by the builder for preparing the quantities, laid himself open to the chance of being suspected of not being altogether impartial in his judicial decisions as between builder and building-owner. It seemed to be a hard thing to say that an architect ought not to be allowed to take out quantities, seeing that, in the architectural, as in the legal, profession, the early years of practice were the most difficult to tide over, but the expediency of separating the two professions of quantity-surveyor and architect was well worthy of consideration. With regard to Professor Kerr's observations, he was somewhat at a loss to understand them. If England were such a benighted nation as was stated by Carlyle, it was really very kind of so many of their Scotch friends to come and dwell amongst them. Notwithstanding, he did think that the practice which prevailed in Scotland of making the quantities part of the contract was the simplest and fairest to all parties. It gave to the builder payment for all that he did,—it bound the building owner only to pay for what was done, and it did not seem to involve any reflection upon the architect, nor place any temptation upon the quantity-surveyor to be loose in his dealings. The only real objection (and he was sorry to say it was a very serious one) to the adoption of the system of making the quantities part of the contract was that it would very much diminish the frequency with which building disputes arose. It was most painful to him (Mr. Turner) as a lawyer to hear Mr. Scott, of Glasgow, say that out of 1,100 contracts in which that gentleman had been concerned, there was only one case in which the lawyers had to be called to settle differences.

Mr. George Stanley Bird, President of the National Association of Master Builders, said the question of making the quantities part of the contract was a matter that had exercised the minds of the master builders for a very long time, and he need not say that it was a matter of vital importance to them. The master builders, he might say, had now arrived at a form of contract which was very nearly like that which was agreed upon between them and the Royal Institute of British Architects some years ago, the only difference being that in the new form of contract, the bills of quantities were made a part of the contract. He spoke from experience when he said that in the provinces, where there were no professed quantity-surveyors, builders were very frequently obliged to accept quantities which, to say the least, were curiosities. He might add that only last week, at a meeting of the London Association of Master Builders, the question came before them of the appointment of two quantity-surveyors in the case of works of any magnitude. He believed that the Institute would be in due course officially invited to take cognisance of this question. He suggested that a conference might be held of architects, surveyors, and builders, with the view of coming to some fair and just arrangement of the questions which he had referred to.

Mr. John Honeyman (Glasgow) said he, like Mr. Turner, had been unable to understand Professor Kerr's objections to the Scotch method as being far too good for adoption in this country. He could only say that the Scotch architects were guided by two principles which seemed to meet with considerable acceptance in England, and which probably might form the basis of a substantial agreement which might lead to some uniformity of practice throughout the country. The first was the principle that the building-owner should really be the employer of the surveyor, and pay the surveyor. That was a principle which was fully recognised in Scotland. The other principle was that the bills of quantities should be the basis of the contract. That was a principle which was fully recognised and acted upon in Scotland. If these two principles were generally recognised, he could not but think that they would lead to further reforms. The benefits of adhesion to those principles were undeniable. One substantial result of their adoption in Glasgow was that practically no law cases connected with building contracts ever occurred, as had already been mentioned by Mr. Scott. In his (Mr. Honeyman's) own practice, extending over a quarter of a century, he had not had a single law case arising out of any contract with which he had had anything to do. He thought it would help to bring British architects into accord, and would give the deliberations of the Conference some practical result, if on both those points the meeting could arrive at some agreement. Such an expression of agreement would be an important step towards a further measure of reform. He thought that in all cases the surveyor should be employed by the architect acting as the agent of the employer; that he should act for the employer, and be responsible to and paid by the employer; and that the bills of quantities should most decidedly form the basis of the contract.

Mr. Macvicar Anderson, in moving a vote of thanks to the readers of the papers, said he thought their contributions would prove to be a most valuable addition to the literature of the subject.

Mr. J. Douglass Mathews had great pleasure in seconding the motion, for the papers were of great interest, and afforded important matter for discussion.

The Chairman put the motion, which was, of course, agreed to, and the second meeting of the Conference was thus concluded.

In the evening many of the gentlemen attending the Conference were present at the Institute Dinner at the Freemasons' Tavern, which we report on another page.

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The discussion of the subject of quantities was resumed at the third Conference meeting, held on Tuesday morning, when Mr. Cates again occupied the chair.

Mr. Medland Taylor, president of the Manchester Society of Architects, read a paper on "The importance, and advantage to the client, of quantities and measuring of works being done by the architect of the works, or under his immediate superintendence." This paper, although in type, we are compelled at the last moment to hold over until next week, together with some extracts read by Mr. Macvicar Anderson from a paper by Mr. Edward Hughes, of Liverpool.

In the discussion which followed,

Mr. Randall (Shrewsbury) said he fully approved of Mr. Medland Taylor's paper as far as it went. When he was an articled pupil they were accustomed, as architects and surveyors, to take out their quantities in the office, and all the pupils were as thoroughly instructed in quantities and measuring as they were in drawing and other more strictly architectural work. For several years of his pupilage he acted as managing clerk to a London firm. In those days quantity-surveyors were very few and far between. There were not more than half a dozen of them, of whom he recollected such men as Hunt, Tyerman, Corderoy, and others. In his younger days he had taken out quantities against those men. Quantities were then taken out by the architect, or under his direction, and supplied to the builder. In course of years, circumstances took him to Shrewsbury; he there found that the practice of a provincial architect was very different to that of a London architect. After some years he managed, by much exertion, to bring together a moderate practice, but he found it an essential condition of pursuing that practice that he should take out his own quantities. His practice had been to do so for many years past, and, indeed, so long as he could afford to work at his profession he should take out his own quantities, and he hoped that the Institute would do nothing to debar him, as a Fellow, from continuing the practice. If any restriction were imposed preventing provincial Fellows from taking out their own quantities, he should have no alternative but to cease to be a member, for he could well afford to save four guineas a year and earn two hundred. For the last ten or twelve years he had always attached a priced bill of quantities to the contract, and it formed part of the contract. If he should unfortunately make an error in these quantities he felt himself bound to make good. He thought that there was not necessarily anything in the practice of an architect taking out his own quantities which bound him to be paid by the builder. Many of his private clients always paid him for the quantities, and he could not understand why an architect trusted with his client's interests, and empowered to act as arbitrator between client and builder, was not to be trusted with regard to the quantities. Was he not, because that trust was reposed in him, to be paid for the work which he had done in taking out the quantities? With regard to the extracts which Mr. Henderson had read, they only showed that the term "architect" was a very wide one. In his experience he had known of men who sought such appointments as that of county surveyor on the strength of having once been bricklayers. One reason why the architect of a building should be allowed to take out the quantities for that building was that nobody was so qualified as himself to do the work, and, moreover, when an architect had prepared his own bill of quantities, he found it a comparatively easy matter to settle up "extras and omissions." With regard to what had been said as to the incomplete and misleading character of the quantities supplied by some architects, was it to be assumed that on that account an architect properly qualified to do so was not to be permitted to take out the quantities for his own work? Surely not. Because there were quacks in the world physicians ought not to be blamed because there were unqualified men who professed to be this, that, and the other. Why should he, as an architect, be under a ban because abuses took place? He considered himself, as an architect, a professional man whose function it was to act fairly between client and builder, never leaning more to one side than to the other. He thought he was a fair representative of provincial architects when he said that it was an absolute essential to the proper conduct of their business, and even of its conduct at all, that they should be permitted to take out their quantities. Architects in good practice in London might be able to afford to discard the work of quantity-surveying, but provincial architects could not do so.

Mr. Charles Fowler said he thought that the side of the question which had been taken by the last speaker had been so very ably put before the meeting that it did not need much further illustration. It was, he thought, generally admitted that in the practice of a country architect, it was a much more desirable course for the practitioner to take out his own quantities; at any rate, it was much less undesirable than was the case in London. One reason why it appeared to be undesirable that architects in London should take out out their own quantities was that probably most of them during their term of pupilage had not been able, especially if brought up in London offices, to give any considerable attention to that branch of the profession; and unless they particularly wished to follow it out afterwards they did not learn it thoroughly. It should be remembered that in these days the tendency was towards sub-division of labour,—specialism; that was to be seen in the medical profession as well as in the profession of the architect. In the latter profession there was the quantity-surveyor, who devoted himself specially to prepare quantities and measure-up; there was the architect who devoted himself more particularly to one style or group of styles; and there was the architect who followed no particular style at all, who built warehouses and large structures where construction was of more importance than art. These were all separate, though not strictly separated, branches of the profession. The consequence was that the quantity-surveyor in London had become a much more separate and necessarily more important person than in the country, and that was, indeed, one reason why, in London, quantities were generally taken out by some other person than the architect, and he thought that was a reason why the London architect should not take out his quantities. True, if the architect were thoroughly able to do it, no one could possibly take out the quantities more accurately than he, knowing, as he did, all the ins and outs of the building; but whether it would be desirable was another question. As to making the quantities part of the contract, he might observe that Sir William Tite, who was eminently a practical man, adopted the custom, in all large works, of making bills of quantities part of the contract. No doubt he had special reasons for that, resulting from his large practice, but he (Mr. Fowler) confessed he had never been able to see his way to do so, and he could not help thinking that if the practice were made generally, it would tend to result in a careless manner of taking out the quantities. On the whole, he thought that, in London, at any rate, the ordinary course of entering into a lump-sum contract appeared to him to be the best, if carried out in a proper way, and upon a bill of quantities carefully taken out. It was also his conviction that in London that would continue to be the course adopted for a very long time to come yet.

Mr. Mitchell (Oldham) said that Mr. Fowler's remarks seemed merely to indicate that a man who was incompetent to do work ought not to do it. As an architect practising in the country, he might say that he had adopted the practice of having the quantities prepared in his own office, though by an independent surveyor; but in all cases he found it advisable to give the contractor an opportunity of checking the quantities, and he then made the quantities the basis of the contract. He had pursued that course for a number of years, and he had found it very satisfactory in its results.

The Chairman observed that the practice of Glasgow appeared to him to be that the quantities taken out as the basis for the builder's estimate were somewhat approximate, and that the final result as to cost was only arrived at by the measurement of the work as executed.

Mr. Honeyman (Glasgow) said he could assure the meeting, in regard to the Glasgow system, that the clients of the Glasgow architects were just as particular as were the clients of other architects in their desire to know exactly what their buildings would cost. That was a question thrust upon the architects of Glasgow in the most powerful way possible, and he and his fellow-architects in Glasgow did their best to satisfy their clients to the utmost. It was not the case, as had been stated by the chairman, that the quantities prepared in Glasgow were merely approximate endeavours to arrive at the estimate of the cost of a building. They endeavoured to come as near the mark as possible, so that the building did not cost more than the amount of the original estimates, and as a matter of fact the actual cost of the building as executed rarely exceeded the amount of the original estimate if the architect had properly prepared his plans and specifications. In his own practice he had invariably found that the ultimate sum paid over to the contractor had not varied more than from 2 or 3 per cent., more or less, from the sum originally intended to be paid to him. Therefore, the Glasgow system was not to furnish a merely approximate estimate, but one upon which the client might rely as to cost. He was perfectly sensible that the direct bound from the ordinary practice in England to the adoption of the Scotch practice was not one likely to be made, but he thought that if the principle were generally admitted that the bill of quantities should form the basis of the contract, the ultimate conclusion must necessarily be the general adoption of the Glasgow system of measurement. With regard to the taking out of quantities by architects, there was no temptation for them to do so in Glasgow, and it was never done. There existed there a large body of excellent surveyors, who were constantly employed on behalf of the employer or building-owner to do that kind of work, under the supervision of the architects. It was, however, he feared, impossible, in many parts of the country, to avoid this combination of architect and quantity-surveyor, and therefore it was of the more importance that the principle of making the bill of quantities the basis of the contract should be fully recognised, because otherwise the architect who took out his own quantities would be placed in a very invidious position. It should be remembered that the strength of a chain was only that of its weakest link, and any particular course of practice which might be thought desirable for general adoption, while adapted to the conditions of the practice of the most honourable men, must be so devised as to guard the clients against dishonourable practitioners. Such safeguards would not be felt to be burdensome by those practitioners who were bent on honourable courses. He felt persuaded that the general adoption of the principle of making the quantities form part of the contract would gradually lead to the adoption of other reforms. In all cases he was decidedly of opinion that the work of the surveyor should be done under the superintendence and control of the architect, in exactly the same way as any other work connected with the building. The surveyor should be employed by the architect on the part of the client, and there should be no muddling of the duties or responsibilities. A distinct code of practice should be adopted, and it should be understood that the surveyor, just as much as the bricklayer, was employed on behalf of the proprietor.

Mr. Hine (Nottingham) said it appeared to him that there were before the meeting two distinct questions: first, were quantities to be made the basis of the contract; and the other, by whom were the quantities to be prepared; and if they were to be made part or basis of the contract, he thought that the architect of the building, or the surveyor under his immediate supervision, was the proper man to take them out. If they were not to be the basis of the contract, then he thought the less the architect had to do with the quantities the better. With regard to the first question, he had always failed to see how the proprietor could be justly served if the quantities were not included in the contract. As to the architect preparing his own quantities, he believed, — and he spoke from experience, having until within the last three or four years prepared at least one bill of quantities every three months,—that the architect who was able to do so was able to serve his client's interest in the very best way. He had the drawings before him, and before the building was actually built he himself had to build it inch by inch, brick by brick, in his mind, and as he proceeded with the work he was able to discover points as to the construction on which he could improve, and often with the most economical results as regarded his client. These advantages were not otherwise attainable. He believed that for the young men of the profession the taking out of the quantities of their buildings was the very best practical education they could have, and he would recommend that all young men who wished to be practical architects should begin their education in an office, either in the country or in London, where the quantities of the works designed in the office were taken out there.

The Chairman asked Mr. Hine whether his (Mr. Hine's) father, in his extensive practice, had not always taken out his quantities and made them part of the contract.

Mr. Hine replied in the affirmative.

The Chairman said he recollected Mr. Hine, senior, reading a paper before the Architectural Alliance some years ago, in which he explained the advantages to be derived from that practice, but the practice to be reprobated was that which prevailed where architects did not take out their own quantities in order to evade responsibility.

Mr. J. Tavenor Perry said he was a London architect who did take out his own quantities, but he could not class himself in either of the categories named by Mr. Young. He was not unable to take out his own quantities, neither was he so busy that he could not afford time to do it. Any architect taking out his own quantities was able to give attention to the drawings and specifications, and was better able to superintend his works in their execution, and with the result of securing greater economy, than when the accounts were left to be settled by reference to the measuring-surveyor. In reference to the examination of his drawings, if the architect did his work properly, he would have to spend almost as much time in going through his specifications as he would have to spend in taking off the dimensions, and he would venture to say that the architect who took off his own quantities in a proper way, direct from the drawings, saved his client at least ten per cent. Everybody knew that it was impossible, in a building of any size, to avoid variations, however carefully the drawings were made, either from the new wants of the client, or from the new ideas of the architect; but where variations or extras had occurred, the architect who had taken off his own quantities was able very greatly to facilitate the measuring-up of extras and omissions.

The Chairman asked Mr. Perry whether he supplied the builder with a copy of the dimensions.

Mr. Perry said he always did so if it were asked for, or he allowed the builder's clerk to come to his office and copy it. He made his quantities a part of the contract, and accepted the responsibility of them. He might add that he never took out the quantities for a building without explaining the whole matter to his client, and he seldom met with any difficulty or objection. Indeed, in some very large works recently carried out by him in London, he was expressly requested by the promoters to take out the quantities.

Mr. McLachlan, President of the Edinburgh Architectural Society, said he was very glad to think that the general consensus of opinion, so far as he could gather it, seemed to be that the Scotch system was a good, and probably the best, system. The position, so ably supported by Mr. Medland Taylor in his paper, that the architect should take out his own quantities, was one which was apparently justified by existing circumstances in England. Mr. Taylor urged that the architect, knowing as he did all about his own design, could much better take out the quantities for it than any one else; but he though that Mr. Taylor, if he could have recourse to the services of such men as comprised the class of skilled surveyors in Edinburgh,—men who were perfectly acquainted with building construction, and able to rightly interpret the architect's intentions,—would probably somewhat modify his opinion. It seemed to him (the speaker) that the most fatal objection against muddling up together the architect and surveyor was that such a practice placed the architect in a most invidious position, and he thought it should be the object of the Royal Institute of British Architects to ensure that the conduct of professional practice was as high and as honourable as possible. Architects ought, he thought, to purge themselves of anything and everything which might be thought to unduly influence them in the discharge of their duties either towards the client or the builder. He thought that if architects prepared the quantities for their own buildings, disputes would continually arise between them and the builders, and the constant squabbling and bickering in which the architect would find himself involved would not add to his professional dignity. All such squabbles between architect and builder would be unknown where, as in Edinburgh, they had a class of skilled surveyors acting as buffers between architects and builders. The Edinburgh system was, he contended, fair in its operation towards all parties.

Mr. Hampden W. Pratt said that Mr. Tavenor Perry had given his experience with regard to the advantages to be derived by an architect taking out his own quantities. Now he (Mr. Pratt) had been brought up in the office of an architect and surveyor in the manner spoken of by Mr. Randall, and had therefore had the opportunity of learning a great deal with regard to quantity practice,—sufficient, indeed, to take out the quantities for his own buildings, if inclined to do so. Since he had commenced practice on his own account, he had, however, determined to have nothing to do with the quantities himself, because he thought that was the better course to pursue. Several reasons had been assigned why it was not advisable that the quantities should be taken out by a surveyor, but one reason why architects would and did take them out was that their commission might be increased. He really thought that the best man to deal with quantities was a competent quantity-surveyor,—a man who was able to give his whole time to that sort of work. He believed that if three out of every four builders were to be asked which they would sooner tender under, architects' or surveyors' quantities, they would reply "Surveyors'." ("No doubt," and laughter). But they were not looking at the matter entirely from a builder's point of view, although builders were worthy of consideration in the matter. For his own part, he believed that an architect was quite as capable as a surveyor of taking out quantities in excess. It was only fair that the builder should have a fair profit on his work; but whether the builder made a gain or sustained a loss on a job he thought it was not advisable that his gain or loss should have arisen out of the excess or deficiency of the quantities prepared by the architect under whom the work was carried out. If the architect made a mistake on the side of the builder in preparing the quantities, the client suffered, although he heard nothing about it; while if the mistake were against the builder, the architect, not liking to go before his client and acknowledge his mistake, although unwilling that the builder should suffer, might be tempted to "make it up" to the builder in some other way during the progress of the works,—although, of course, no honourable man in the architectural profession would seek to screen himself from a mistake in that way. That was one very great reason why the quantities should be made part of the contract. All the squabbling that now so frequently arose would be obviated if that course were adopted. All things considered, he thought the right thing was for the architect to be perfectly independent of the quantities, which should be prepared by a quantity surveyor appointed by him and paid by the employer. The drawings sent to the quantity surveyor should be thoroughly well prepared, and accompanied by a good specification. He believed that it was often to the slovenly and insufficient drawings of the architect that much of the complaint heard against quantity surveyors was due. No

wonder that it was charged against quantity-surveyors that they did not know so much of a building as its architect. The incompleteness of the drawings from which they had to work prevented them from knowing all they should know in order to properly take out the quantities of the building. It was sometimes the custom for the quantities to be taken out by the architect in conjunction with a surveyor. That was a sort of go-between or compromise, and was, he thought, a mistake; for, in most instances, the two men would not be equal, the professed surveyor being a better man at quantities than the architect. Then, when the work thus jointly done was completed, who was to be paid for it? He supposed the commission was to be shared between the two persons. If so, was one per cent. on the cost of an ordinary building a sufficient remuneration for each person's work? He supposed not. But was more to be charged? If so, would not the client suffer? He thought so. It was, he thought, not at all an uncommon thing for the surveyor to prepare the specification after the bill of quantities. That was an objectionable course in itself, for the architect ought not to send out his work half done,—drawings without specification,—to the surveyor. But in cases where the specification was prepared by the surveyor, he ought to be paid for it, and if he did it without being paid for it by the architect, it was tantamount to sharing the commission for the quantities. Before concluding, Mr. Pratt said he should very much like to see held a conference of builders, architects, and surveyors, as suggested by Mr. Stanley Bird at the meeting on Saturday, for the purpose of fully discussing these questions together.

Mr. Aldridge, President of the Liverpool Architectural Society, said that he supposed all present would be agreed that the taking-out of quantities was a necessary adjunct and process in making a building contract. Great as were the advantages of the practice, there were some disadvantages. When he was in a provincial architect's office some fifteen or twenty years ago, the quantities were not taken out at all. When estimates were invited the builders came to the architect's office and took out their own quantities. No doubt there were disadvantages under that system, but it nevertheless possessed advantages which were sometimes overlooked. One advantage of the old system was that under it the architect had to prepare most careful drawings and specifications before an estimate could be given; another advantage was that under it each builder had to make himself thoroughly well acquainted with the drawings and specification before he sent in his tender. The practice of tendering for works as conducted at the present day was generally a mere question of figures, and very often it happened that in the case of important buildings the persons tendering never troubled to look at the drawings or specification describing the work of the various trades required in the erection of the buildings. That was surely a very great disadvantage, and he could not help thinking that in the wording of every tender submitted for a building, the contractor should say that he agreed to erect the building according to the plans, specification, and bills of quantities, "having had the opportunity of studying the specification and drawings," or words to some such effect. With regard to the question of the advisability of the architect taking out his own quantities, he, as a provincial architect, partly by force of circumstances and partly by inclination, had been compelled to take out his own quantities, and he was very much in favour of the practice, for several reasons. In the first place, it was necessary for the architect to be thoroughly conversant with the practical details of his profession, and there could be no better test of that knowledge than his ability to take out the quantities of his buildings. How cheaply might not a young architect, ignorant of practical details, get into practice on his own account with the help of a friendly quantity-surveyor! He need only make very slight sketches of his proposed building: his friend the surveyor would put the building together for him. Neither need the young architect trouble himself to write a specification; the friendly quantity-surveyor said,—"Don't trouble yourself about the specification; I will write it for you." Well, the building went on; perhaps by good chance no difficulties arose for a time, but sooner or later they would arise, and then the young architect had to run to and fro to the quantity-surveyor to know how things were to be done. All these difficulties arose through the architect not possessing that practical knowledge of his building which he would obtain in the process of taking out his quantities were he able to do so. If he continued in practice he sooner or later found it necessary to acquire that ability, at the loss of an amount of time which he could have better spared when a younger man. It was an absolutely essential condition of provincial architectural practice that the architect should take out his own quantities. When he commenced practice in Liverpool ten years ago, in the first buildings he erected there he employed a London quantity-surveyor, but he found the arrangement unworkable, owing to the distance from London. In Liverpool there were very few quantity-surveyors as they were known in London. There were some architects in Liverpool who combined the taking out of quantities with general practice as architects, but for obvious reasons he did not think it desirable to let his drawings go into the offices of other architects in the same town. He was therefore compelled to adopt the practice of taking out his own quantities, and he had never regretted it. Several advantages of that practice had been touched upon by the various speakers, but there was one great advantage which could not be too highly thought of, viz., that the architect who took out his own quantities had to build his building, so to speak, stone by stone. Nothing could escape his eye in the process. He was compelled to consider and surmount difficulties in construction as they arose, and he was able to form an accurate idea in his own mind as to what the building would cost. The process also enabled him to save a great deal of his client's money, and, on the whole, the building came out with a much more favourable result than if it had been put into the hands of a quantity-surveyor. Quantity-surveyors were but mortal, and they no doubt felt they were more or less responsible for the accuracy of their quantities. They, therefore, took care to err rather on the right side, *i.e.*, that there should be a sufficiency of everything. As to the payment of architects for the quantities of their own buildings, it had been urged that it was not desirable that there should be money payments from the builder to the architect; but it seemed to him to be a matter of very little moment whether the client paid the architect direct for the quantities, or whether the builder paid the architect with the concurrence of the client.

The Chairman asked Mr. Aldridge whether in his practice he made the quantities a part of the contract?

Mr. Aldridge replied in the affirmative.

Mr. J. Douglass Mathews said it appeared to him that there was another person entitled to consideration in the settlement of the question of quantities, viz., the client. They had been almost exclusively looking at the question merely from the point of view of what would be to the relative advantage of the architect and the builder. But, as architects, they knew perfectly well that when their clients came to them they gave them their confidence, and then expected them to take every means to carry out their building to their satisfaction. There were, no doubt, some architects who were in a position to dictate to their clients as to the exact course to be pursued, and to refuse a commission unless their views were met. He, however, speaking as a general practitioner, could not help thinking that if he went to the client who had given him his confidence, and told him that he had prepared plans and specification, but that when the work had reached that point, he had put it into the hands of another person, a stranger, in order that he might take out the quantities, the client might very naturally not feel that confidence which he felt in the architect alone; in short, the confidence between client and architect would be in a great measure lost. He was most decidedly of opinion that the client did look to the architect to carry the whole of the matter through for him, and to protect his interests. He, therefore, quite agreed with the remarks which had been made by almost all the gentlemen who had preceded him as to the desirability of the architect taking out his own quantities. Mr. Tavenor Perry had said very much what he (the speaker) had intended to say. Never had he regretted taking out his own quantities; it had been of considerable advantage to him in carrying out works, and it had been advantageous also to his clients. He thought that one thing for the Conference to consider was, should it be part of the architect's education to understand the taking-out of quantities? He thought they would agree that it ought to be. The architect clearly ought to understand how work should be measured, for he would need such knowledge not simply in the taking-out of quantities in the first instance, but in the settlement of accounts at the end of the contract. If the quantities were taken out by the surveyor, it was perfectly certain that the surveyor must be called in at the end of the job to adjust the accounts. As many gentlemen present would know, when the surveyor was called in at the last moment he took his instructions to a certain extent from the builder's foreman (he was speaking of cases where a clerk of the works was not employed), and consequently he leant rather to the side of the builder. There seemed to be rather a general feeling that all architects made mistakes in taking out quantities; he did not know why an architect should make mistakes in quantities any more than in drawings or specifications. The architect who acted as his own quantity-surveyor was able to perform his duties as arbitrator between client and builder with a facility that he would not otherwise enjoy, and he would be able to hold the balance evenly between the two parties. A great deal had been said about architects being easily swayed to one side or the other, but such men were not entitled to the name of architect. An architect ought to have the full confidence of both client and builder, and should be above suspicion. In the absence of architects supplying his own quantities the course was sometimes adopted, and he thought with very good results in works of ordinary magnitude, of calling in the surveyor to sit down to the quantities with the architect. He thought that course was calculated to have a very beneficial effect upon both parties. By the adoption of that course the architect could tell the surveyor exactly what he intended by his drawings, and the builder might possibly feel more confidence in tendering. It appeared that the practice was now growing up of doing without quantities altogether, architects going to two or three builders, without any quantities, and asking them to tender from their drawings and specification alone.

Mr. J. Macvicar Anderson said that it seemed to be the practice in the provinces for architects to take out their own quantities, and from what had been said, he did not think it would be desirable for the Institute to attempt to legislate on the subject just now. If the question were asked of him individually, he should say that in his opinion it was most undesirable for the architect to take out his own quantities. No doubt an architect should be a man of business, but he should not be solely a man of business,—he should be a professor of an art, and, in his opinion, the more he strived to excel as a professor of that art the more highly would he be esteemed. The argument that had been used that it was in some instances necessary for young men entering upon the profession to combine the practice of quantity-surveying with that of architecture in order to eke out a living, was no doubt one of some force, but in his opinion it was not so much a question of expediency as one of principle. He thought the Conference in discussing the matter should take higher ground than that. Mr. Medland Taylor objected to call in a quantity-surveyor because he thought such a course would be to commit his client's interest to another person not contemplated by the client, but he (Mr. Anderson) denied that that was the case. When the drawings went to the surveyor there was constant intercommunication between him and the architect. On the question of payment he would most strongly urge that where architects did take out the quantities for their works, it was essential that they should not make their charge for them through the medium of any tradesman, for he thought that no professional man should make a charge in respect of any services, or receive payment for such services, except from the employer. Even where a surveyor took out the quantities, he thought that the charge for them should be made direct to the employer, and not to the builder. With regard to Mr. Douglass Mathews's remarks about the client objecting to the work going into the hands of a stranger in the person of a quantity-surveyor, he thought there was no force in them; the same argument might just as well be applied thus:—The client might say to the architect, "I employ you to design my house for me, but I object to your employing a builder to carry it out." There would be just as much force in the one

objection as in the other. As to the question of the quantities forming part of the contract, he would venture to ask why should they not? The question had never arisen in his own practice, but practically, as everybody knew, the quantities always were the basis of the contract, for when there was a dispute, the first question that was put was, "What do the quantities say? How is it taken?" As to sharing commissions for quantities, he thought that was a desirable point to be referred to. For his own part, he was quite unaware that such a practice existed until a recent case brought it to his knowledge. The practice might be justified by saying that the architect had to check all the measurements, &c. However that might be, he thought the practice was a highly improper one, and although he had been informed that it was a general one, he trusted that that was not the case. He thought it extremely desirable that it should go forth from the Conference that such a practice was repudiated by all the honourable members of the profession, as one which was altogether improper, and greatly to be deprecated. Mr. Rickman, in some remarks made on Saturday, seemed rather to object to any legislation on the subject, owing to the constant changes which were occurring; but that would be an argument against all legislation. Would it not be possible to lay down some general rules for the guidance of the profession in these matters as the result of these discussions?

The Chairman said, that acting upon that suggestion, which had been present in his own mind, he would ask Mr. Anderson to formulate some resolutions to be submitted so the meeting at a later stage. He might state in reference to the remarks made by Mr. Stanley Bird, at the meeting on Saturday, that communications had been received from the National Association of Master Builders, and from the legal officer of the Master Builders' Society; but these communications unfortunately had been addressed to the Council of the Institute, and so he was unable to lay them before the meeting. However, they had the advantage of the presence of Mr. Frederick Dove, a well-known and highly respectable London builder, and perhaps he could favour the Conference with the views of the builders on the subject.

Mr. F. J. Dove (Dove, Bros.) said he regretted to say that, as he had been absent from town for a few days, he was not fully conversant with all that had been done by the Master Builders' Society with reference to the subject; nor had he had the advantage of hearing the papers read on Saturday. He wished to be allowed to say, most distinctly, that no builder of any repute in London or elsewhere desired to be paid for anything more than he undertook to do; and whether the work which they undertook to do was set out in bills of quantities prepared by qualified surveyors or by qualified architects, it mattered little to the builders, so long as the quantities were made part of the contract. Without such a condition builders were not likely to tender on the quantities prepared by architects, for such quantities were too often prepared in such a way as to utterly mislead the builder, and against quantities prepared by inexperienced hands the builders had no protection unless they were made the basis of the contract. It seemed to him that there really was a great deal more mystery made of the subject of quantities than there was the slightest occasion for. One commendable practice pursued by some country architects who were their own quantity-surveyors was that of giving very copious sketches of detail on the margins of the bill of quantities. That course was not adopted to any great extent, however, valuable and useful as it was to the builder in assisting him to put a just price upon the work. Why the practice was not more extensively adopted he did not know; the only reason he had ever heard assigned for not carrying it out in London was that some architects were so proud of their position as architects, and of the details of their art-work, that they objected to their details being "hawked about" in surveyors' offices. That was a reason assigned by some of the most eminent quantity-surveyors to whom he had spoken on the subject. He thought that it would be far more satisfactory to the building-owner or client if the bill of quantities formed part of the contract: he would then see exactly what he was getting, and would know what he was paying for. He trusted that an opportunity would occur for some further discussion between architects, surveyors, and builders, of the questions involved.

The Chairman said that the following suggestions had been submitted to him by a member of the Conference, *viz.*:—

"That the surveyor should invariably be employed by the proprietor directly, or in the usual way through the agency of his architect.

That he should be the servant of the proprietor (building-owner) *quoad* the quantities, and should be responsible to him.

That he should be under the control of the architect, and his work and accounts subject to his supervision, exactly in the same way, and to the same extent, as any one else employed.

That he should be invariably paid for all his services by the building-owner.

That the bills of quantities should always form the basis of the contract, and that the contractors should be required to furnish the architect with a complete schedule of his prices."

He should like to have Mr. Dove's opinion as to the possibility of their acceptance by the builders.

Mr. Dove said he would look them over and give his opinion a little later on.

Mr. Robert Scott (Glasgow) observed that some of the speakers had expressed the opinion that architects ought to take out the quantities for their buildings because, when they were articled pupils, it was the custom to take out the quantities of works the drawings of which were prepared in the offices in which they were articled. That argument, he thought to be untenable, for in the same way it might be urged that builders should also be architects in the present day, because of the undoubted fact that a century or more ago the eminent architects in Glasgow were also builders, and carried out their own works. Mr. Medland Taylor, he thought, had stated that the builder's estimate, based on the bill of quantities prepared by a surveyor, often exceeded the estimate of the architect; but, when that was the case, was it not right and proper that the architect's estimate should be exceeded?

Mr. Medland Taylor.—I should say no, certainly not, in the majority of instances.

Mr. Scott, continuing, said that it might happen that the quantity-surveyor might have insufficient material in the shape of drawings to work from. He begged to differ from the gentlemen from Edinburgh in their statement that the Edinburgh system was the best. He stood up for the Glasgow system. He was glad to have heard the remarks of Mr. Picton and Mr. Francis Turner in favour of the Glasgow method, and he would only say that if in England the architects committed themselves to the principle of making the bill of quantities part of the contract, they would be practically adopting the Glasgow system.

Mr. Dove said that to the majority of the proposals which had been submitted for his consideration, he thought that, speaking as an individual builder, there would be little or no objection. He thought, however, that the third suggestion would be likely to lead to litigation. He did, object, however, to the requirement that the builder should furnish the architect with "a complete schedule of his prices," which was a manifestly unfair requirement.

Mr. Poole (Manchester) said he had listened with very great interest to the discussion, and he agreed entirely with Mr. Medland Taylor's paper. He did not think by any means that it ought to go forth as the recommendation of the Conference that it was an undesirable thing for the architect to take out his own quantities. He had been in practice in Manchester now for something like five-and-twenty years, and in the earlier part of his experience he had been in offices where it had been the invariable rule for the architect to take out his own quantities. His own practice had been to take out his quantities, and to make them the basis of the contract,—the quantities as explained by the contract-drawings and specification. He had never had a lawsuit in a very considerable experience. He thought that the element of danger was introduced when it was endeavoured to fix the accuracy or inaccuracy of the quantities upon the architect or surveyor who might have taken them out. When a client came to him, he spoke plainly and frankly to him, and told him that it would be necessary that he should supply the builder with a copy of the quantities, and that, therefore, the quantities would have to be taken out and charged for. He seldom had any trouble in getting the client's promise to pay for them, and he frequently found the client preferred that the architect should take out the quantities. As an instance, some time ago a public body in the neighbourhood of Manchester promoted a scheme for a building to cost about 60,000*l*. The committee who had the matter in hand was presided over by a civil engineer of some eminence, and included several gentlemen of practical knowledge, and he felt greatly honoured when the committee waited upon him, without instituting a competition, and invited him to undertake the commission, but they made the stipulation that he should take out his own quantities, and that the quantities should be made the basis of the contract. In the matter of payment for the quantities, some of his clients paid him directly themselves, but when they did not do so, he frankly told them that the builder would pay him.

Mr. Waterhouse, A.R.A., said it seemed to him that there was an enormous advantage in making the bill of quantities form a part of the contract, and he was disposed to advocate the making of the bill of quantities alone, without including the specification, form the basis of the contract. That system carried with it the advantage that the quantities could be taken out absolutely nett. It was very easy under the old system to allow a small margin on each item, but the aggregate of such allowances would very often amount to, perhaps, 5 per cent. on the whole work.

Mr. Watkins (Lincoln) thought that the payment for quantities should invariably be made direct by the building-owner. It had been his practice to have the quantities of his buildings taken off in his own office under his own superintendence, and to make them form part of the contract. Like Mr. Tavenor Perry, he had adopted the practice of writing his specification after the bill of quantities had been prepared. His experience was precisely that of other speakers who had referred to the necessity that existed for provincial architects taking out their own quantities. He was compelled to do so himself, for there was no quantity-surveyor in Lincoln, and the members of the local builders' association had refused to tender for any building the cost of which would exceed 300*l*.

Mr. Hine (Nottingham) said that they were adopting in his office the practice of making the bill of quantities and the specification one document. It answered very well. Every item in the bill of quantities had its specification, and it was evident at a glance what work had to be done, and in what position of the building each item had to be placed. By that means, as the work progressed it could be seen at a glance by any one, the proprietor as well as the architect, what had been put into the building. It had been remarked in the course of the discussion that errors in the bills of quantities arose from the fact that architects supplied deficient or insufficient drawings to the quantity-surveyor, and that if the architect were to take out his own quantities it would be utterly impossible for the drawings to be insufficient. In taking off quantities he, as a rule, prepared his details as he proceeded. His clerks worked them out, and in that way all important details were prepared before the works were tendered for.

Mr. Sidney Young said that Mr. Macvicar Anderson had so fully expressed his (the speaker's) views in the matter, that he had very little to say in addition to what he had already said in his paper. There was one point, however, which had been somewhat overlooked, or, at least, only slightly touched upon, and that was the question of the special education of architects for the taking out of quantities. He thought everybody in that room was aware that, as a rule, an architectural pupil had very little time, indeed, during the term of his pupilage, to study the method of taking out quantities; he was generally too fully employed with the T-square and the set square during the five years of his pupilage. It was well known to be the fact that a young man who served a pupilage of five years to a quantity surveyor, dealing with quantities alone during that period, was very seldom a competent surveyor as soon as he came out of his pupilage. How, then, could it be expected that an architectural pupil who had to devote a great portion of his time to other things, could properly learn to take out quantities, even supposing he were articled in an office where the quantities were taken out by the architect or under his superintendence? If a quantity-surveyor attempted architecture he was laughed at, although, from his having to deal with architects' works, he might fairly be presumed to know something about it, but it seemed to be, in the opinion of some gentlemen, an easy thing for an architect to be also a quantity-surveyor. He most fully agreed with what had been said that when an architect took

out his own quantities it was desirable that they should form part of the contract; but he also thought that if quantities which were prepared by any one who called himself a surveyor were made part of the contract, it would lead to the springing up of a class of surveyors specimens of whose work had been furnished in the extracts which had been read from Mr. Hughes's paper. He thought the Glasgow system was a very good one, but he preferred the London one. He thought that the laugh which had been caused by Mr. Pratt's observation to the effect that builders preferred to tender upon the quantities provided by the quantity-surveyor rather than on the quantities furnished by the architect, arose from the misapprehension of his meaning. He thought that what Mr. Pratt meant to say was that builders preferred to tender upon the surveyor's quantities, not because they were in excess, but because they were more clearly drawn up. In his limited experience he had found that more litigation arose out of the quantities taken off by the architect than out of those taken off by a surveyor.

Mr. Medland Taylor said he confessed to a feeling of agreeable surprise that the arguments contained in his paper had met with so little real antagonism. He thought that most of the arguments which had been adduced in the course of the discussion were on the side of his paper. Mr. Young had said that pupils of quantity-surveyors, after serving articles for five years, did not know very much about taking out quantities. In reply to that he (Mr. Taylor) would be inclined to ask, "How should they?" If they had been in architects' offices where the quantities were taken out, they would probably have known much more about the work. Mr. Dove had said that builders only desired to be paid for what work they actually did. Very well. His (Mr. Taylor's) paper had shown how that end might be attained. Mr. Fowler's arguments were, he thought, very strongly on his side. He admitted that nothing was so calculated to teach the young architect a knowledge of the details of construction as the practice of taking out quantities, but somewhat curiously went on to argue that it would be better that the quantities should be taken out by the quantity-surveyor, because the tendency of the day was towards "specialism." Well, that was certainly something like "special pleading." With regard to the examples of deficient quantities quoted by Mr. Hughes, of course builders in the position of Mr. Hughes and Mr. Dove would not tender upon such quantities, and would decline to carry out works under architects from whose offices such quantities had emanated. The views which had been expressed by Mr. Randall, of Shrewsbury; Mr. Hine, of Nottingham; and Mr. Tavenor Perry, were very important. He agreed with Mr. Perry's conclusion (though he did not give expression to it in his paper) that the architect who took out his own quantities could save his client 10 per cent. on the cost of a building.

Mr. Goddard (Leicester) said that before the discussion was closed he should like to say a word or two. He agreed very much with what Mr. Tavenor Perry had said. The custom in Leicester had been for the architects to take out their quantities and make them part of the contract, and at the conclusion of the contract to supply the builder with a copy of the deductions and extras. He should be inclined to deprecate exceedingly any recommendation going forth from the Council of the Institute, or from the Conference, to the effect that it was unadvisable for architects in the country to take out their own quantities, if they chose to do so. The result of the abandonment of the present method of procedure would be to send out into the world a very much larger number of incompetent young men as practising architects than was the case now. There would be no one more pleased to avoid the responsibility of taking out quantities than himself, but he did not see his way to do it. His practice and the practices of most provincial architects consisted almost exclusively of small works. He might add that he was considered in the town in which he practised as a "most expensive" architect, because his charge was 7 per cent., including payment for the quantities. It was sometimes objected to his charge, that they could get a London architect to come down and take the commission for 5 per cent. on the outlay, but the client forgot that the other 2 per cent. came out his pocket indirectly in the shape of the payment made by the builder for the quantities, which he, of course, took to recoup himself in the amount of the contract.

Mr. Boardman (Norwich) said he should not be able to carry out his designs if he did not take out his quantities, for respectable builders would refuse to tender unless upon the quantities. He always consulted his clients as to whether he should take out the quantities, and he generally succeeded in getting their consent to do so.

The Chairman, in closing the discussion, observed that even if the Conference were unable to arrive at any very definite result, he thought the discussion would not be in vain, as it showed what progress had been made in the formation of opinion on the question. The result of the publication of the expressions of opinion which had been made in the course of the discussion could not fail to be highly advantageous both to architects and quantity-surveyors. He would not attempt to review the whole of the discussion, for it would take up too much time. On the question of the payment for the quantities, even when prepared by a surveyor, he thought the payment should be made directly by the client. Complaint was sometimes made of the high scale of the quantity-surveyor's charges, but the charges made were not too high in consideration of the fact that the surveyor held himself responsible to the builder to make good deficiencies in the quantities. It was sometimes said that quantity-surveyors took out their quantities "full," in order to secure themselves from being called upon to make good mistakes in the way of omissions, but surely any one doing that was not worthy of the name of quantity-surveyor. In cases where the surveyor was not expected to guarantee the accuracy of the quantities, he would be satisfied to receive remuneration on a lower scale. However excellent the Scotch system might be, it was not likely to commend itself to London practitioners. That system was exhaustively discussed in a paper read before the Institute in that room some time back by Mr. Honeyman, but he was afraid he did not make many converts. The English system of obtaining a lump-sum tender for which the building should be carried out, provided the architect did not change his fancies, nor the client himself makes changes or alterations, had much to commend it. Happy was the architect who, when he undertook a work for a client, found that his client had gone abroad, and intended to stay there until the job was completed. Allusion had been very aptly made in the course of the discussion to the modern practice of sub-division of labour, which was a very excellent thing, in so far as it enabled a man to devote himself thoroughly to specialities which must be thoroughly understood by him. Nothing could be more conducive to the interests of the two professions than that the profession of the architect and that of the measuring-surveyor should be as far as possible kept distinct. Whatever had been said to the contrary, he thought there was no question but that a young architect might, in the course of a few months' study in the office of a quantity-surveyor, arrive at such a good knowledge of quantity-surveying as to stand him in good stead in his subsequent practice. He thought that unless there were special reasons for it, the architect should not take out his own quantities. One result of the system of issuing quantities to builders had been that architects were now able to procure whole tenders for works in districts where, only comparatively recently, the work of the separate trades was tendered for separately. It was a matter of very serious consideration whether the building artisans, and whether the architects, had benefited by the change. Our builders were not now artisans, but were great capitalists, who simply farmed out their work to smaller tradesmen, who did not come into contact with the architect, and who were mere agents for making gain for the large capitalists. He thought that it would be a very desirable thing for all parties if the architect could come more in contact with the men who really carried out the work of the various trades, but he did not see how that was possible under the present system of lump-sum contracts. Forcible as were the arguments which had been urged in favour of architects taking out their own quantities,—and he quite saw the peculiar position in which provincial architects were placed, and admitted the advantage which the architect derived from the knowledge of his building which he gained by taking out its quantities,—he could not but think that it was undesirable for architects to pursue the practice unless compelled to do so. He thought that the Conference had been successful in presenting an aggregation of virtuous architects. There were some architects who, with a mere desire for gain, took out their own quantities, without being qualified to do so, and the consequence was they landed their clients in difficulties of all kinds. The practice of such incompetent quantity-surveyors seeking to indemnify themselves by some such heading as the following (which was an actual specimen from a bill of quantities prepared by a London architect) could not be too strongly condemned:—

"The quantities are condensed as much as possible, and allowance must be made in price for all minor matters and appurtenances, and no claim shall afterwards be made on account thereof, or for any mistake or variation therein, as the builder must include sufficient for the works to be finished complete, the quantities being nett."

That a man could be found in the profession who had the effrontery to put such a heading as that to his bill of quantities was surprising. Mr. Morham, in his paper, had referred to the Institute rates of professional charges for works, but those rates were not rigidly fixed by the Institute. It was never contemplated by the Institute that all works, large and small, should be charged for at the same rate, and by all sorts and conditions of men in the profession; such a proposal would be absurd. The Institute Schedule of Professional Remuneration simply laid it down as an established principle that, in the absence of any agreement to the contrary, the ordinary rate of remuneration for an architect was 5 per cent. on the outlay. It was, he thought, a very serious misfortune indeed that a great and eminent architect who had passed away within the last few years did not advance the profession by declining to undertake works, except very large ones, on the ordinary commission of five per cent. When a gentleman learned in the law advanced in his profession and "took silk," he increased the amount of his fees; his work diminished, but his remuneration increased. Why should it not be a recognised principle in the architectural profession that when a man arrived at a position when his services were in great demand, he should value those services higher, and stipulate for payment at the rate of seven or ten per cent. commission on the outlay of the works carried out under his superintendence? And why should young men just entered on the profession be expected to charge as much as five per cent. if it suited them to charge less? In these observations he (the speaker) must not be understood as in any way impugning or throwing doubt upon the accuracy or authority of the Institute schedule of professional practice, for he entirely endorsed it. He would not trouble the meeting with further observations, but would read the resolutions which had been drafted by Mr. Anderson as an embodiment of the views of the Conference on the subject of quantities. Those resolutions were as follow:—

In the opinion of this Conference it is desirable—

1. That when architects take out their own quantities, they should do so with the concurrence of their employers; and that the charge for them should be made direct to the employer, as in the case of other professional work, and not through the medium of a contractor.

2. That where quantities are supplied by architects, or by persons in their employ, it is essential that they should form part of the contract.

3. That it is the duty of the person who takes out the quantities to supply to the builder, at his request, a certified copy of the dimensions on which the bills are based.

And that these resolutions be reported to the Council of the Royal Institute of British Architects.

These resolutions were, after a little further discussion, agreed to *nem. con.*, and so ended the proceedings of this section of the Conference.

## COMPETITIONS.

The discussion of the subject of "Architectural Competitions" was opened in a thin meeting held on Tuesday afternoon, the chair being taken by Professor Kerr. There was no definite programme of procedure laid before the meeting, and the consequence was that the proceedings were somewhat desultory. The discussion of the subject was resumed at the evening meeting, held under the chairmanship of Mr. Charles Barry, when the proceedings were of a more animated character. After a long discussion, the principal points in which we shall report next week, the following resolutions were agreed to:—

1. That the promoters of an intended competition, as their first step, should appoint one or more professional assessors, Fellows of the Royal Institute of British Archi-

tects (of not less than fifteen years' practice), whose names should be published in the original advertisements and instructions.

2. That the assessor or assessors ought to draw up the particulars and conditions, or advise upon and supplement them if already drawn up.

3. That the decision of the assessor or assessors ought to govern the choice unless insuperable objections shall arise.

4. That competitions should be initiated either (A) by inviting preliminary sketches involving only moderate cost to each competitor, preparatory to a final competition, or (B) by personal invitation without sketches.

If A,—by advertisement, inviting architects willing to compete for (here describe the intended work) to send in their names by a given day, on receipt of which each applicant will be supplied with the instructions prepared under the advice of the professional assessors. Each applicant from such instructions to send in by a given date a sketch design (here describe limit and character of such sketches). The promoters, with the advice of the professional assessors, will select from such sketch designs not less than (here specify the number), the authors of which shall be invited to join in a final competition, in which each shall receive for the preparation of his design a sum to be fixed by the promoters, with the advice of the assessors. From these designs a choice to be made of the architect to carry out the work.

If (B) without sketches,—by advertisement, inviting architects, willing to compete for (here describe the intended work) to send in their names by a given day, with such other information as the candidate may think likely to advance his claim to be admitted to the competition. From these names the promoters, with the advice of the professional assessors, will select (here specify the number) to compete; and each competitor thus selected will receive *l.* (here state the amount) for the preparation of his design. From these designs a choice to be made of the architect to carry out the work.

5. That the eventual employment of the author of the best design, as the only real prize of the competition, ought to be considered an obligation of honour if it can reasonably be accomplished.

6. That every member of the body promoting the competition, and every assessor, must necessarily abstain from taking part in the competition, or acting as architect in the execution of the proposed work.

7. That the work, if carried out in any shape, should be placed in the hands of the architect whose design has been adjudged to be the best, and he should be thereby placed in exactly the same position in relation to the employer and the intended work, as he would have been had he alone been professionally consulted.

8. That in case a competition has resulted in the selection of an architect, and the instructions to him to proceed further in the matter are not given within twelve months from the time of the architect being so selected, he should be paid at the usual professional rate, under the advice of the assessors, inclusive of the sum paid to him in common with the other competitors, and such payment should be taken on account of commission, should the work be at a future time carried out from the design submitted by him in completion, and under his superintendence.

9. That if the employer desires to possess or retain any other of the designs, except the one adjudged to be the best, he should have the opportunity of doing so by making payment to the author (if he be willing to part with his drawings).

10. That where preliminary sketches are submitted, each competitor should be at liberty to sign his sketches or adopt a motto; but in all other cases he should sign his name to his drawings.

11. That the Council of the Royal Institute of British Architects be respectfully requested to take the initiative in establishing a system of competition on the above basis; and in procuring for it the adhesion of the whole profession throughout the country.

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During the week visits have been made by the members of the Conference to a number of buildings of interest.

On Monday morning a large number of gentlemen visited the picture gallery and state apartments at Buckingham Palace, by special permission of Her Majesty the Queen. During the afternoon of the same day visits were paid to the interesting Chapel of St. Etheldreda, Ely-place, Holborn; and to the churches of St. Bartholomew the Great, Smithfield; St. Giles's, Cripplegate; and St. Helen's, Bishopsgate. These visits were under the able and pleasant guidance of Mr. George H. Birch, A.R.I.B.A., whose remarks at St. Bartholomew's were supplemented by some observations by Mr. Tavenor Perry.

On Wednesday morning a large party, numbering 150 or 200 persons, assembled in the architect's office at the Royal Courts of Justice, where were displayed for inspection a large number of the working detail drawings. Mr. Street received the visitors, and before conducting them over the buildings made some observations on the arrangement of the plan and as to the progress of the works. He stated, among other things, that owing to unwise retrenchment of expense on the part of the First Commissioner of Works who was in office at the time the works were commenced (Mr. Ayrton), the building, originally planned to contain twenty-four courts, would now contain only eighteen, and it was in contemplation to erect a supplementary block of buildings to contain some half-dozen courts (for which he had prepared plans) on the land to the westward of the buildings now in progress. This proposed supplementary block would be connected with the buildings now in progress by a bridge.

On Wednesday afternoon visits were paid to the residence of Sir Frederick Leighton, P.R.A., and to the new Hospital for Consumption, Brompton (of which we published a view and plans some little time ago*). In the evening there was a *conversazione* in the rooms of the Institute, which was very numerously attended, and passed off most satisfactorily.

On Thursday morning the members of the Conference went over Messrs. Doulton's potteries at Lambeth, and in the afternoon they visited Hertford House, Manchester-square, by invitation of Sir Richard Wallace.

The proceedings of the Conference were brought to a close on Thursday evening, when the new President of the Institute, Mr. Street, R.A., occupied the chair. The following papers on mural decoration were read, viz.:—"On Mural Painting and the Gambier Parry Process," by Mr. Ford Madox Brown; and on "The Coloured Decoration of Public and Private Buildings," by Mr. John D. Crace.

We shall next week continue our report of the proceedings of the Conference.

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## THE INSTITUTE DINNER.

THE Members' Dinner of the Royal Institute of British Architects took place on Saturday evening at the Freemasons' Tavern, Mr. John Whichcord, President, in the chair. About 140 gentlemen (including many of the provincial architects attending the Conference) sat down to table.

The usual loyal toasts having been duly honoured,

Mr. Horace Jones, in proposing "The Houses of Parliament," coupled with the names of Lord Talbot de Malahide and the Right Hon. George Shaw-Lefevre, First Commissioner of Works, referred to the archæological labours of Lord Talbot de Malahide, and congratulated Mr. Shaw-Lefevre upon being in office to witness the completion of such fine buildings as the new Natural History Museum at South Kensington, and upon the probability of his remaining in office to witness the completion of the new Courts of Justice—two of the most important blocks of buildings (and the works of two of the most eminent members of the Institute) that had been erected of late years.

Lord Talbot de Malahide replied on behalf of the House of Lords, and

The Right Hon. G. Shaw-Lefevre, in responding for the House of Commons, contrasted the, as he thought, ephemeral work of a political career with the longer-lived achievements of architects. The most important political speech of the day was probably forgotten after a very short time, and entombed in "Hansard," only to be unearthed now and then by political opponents. On the other hand, great works of an architectural character, such as those to which allusion had been made, would remain to attest the skill of their designers long after the speeches of the statesmen of their time were forgotten. With regard to the new Natural History Museum, he ventured to say that he did not think a more beautiful or original work had been erected in modern times. The central hall was especially worthy of notice. As to the new Courts of Justice, he had the utmost confidence that when completed they would turn out to be worthy of the great object to which they would be devoted, and of the reputation of their distinguished architect. Among recent important buildings lately completed for Government purposes were the new Post-Office Savings Bank and the new Bow-street Police Courts, both of which buildings were products of the talent at the disposal of her Majesty's Office of Works. When the important buildings now in hand were completed, the Government contemplated taking steps for the erection of some additional important buildings, with a view to the concentration of the business of some of the departments of the public service. If, as he hoped would be the case, he should be in office when the completion of the new Courts of Justice would enable the Judges to quit their old Courts at Westminster, he proposed to pull down the buildings on the west side of Westminster Hall, so as to open out to public view the exterior of the Hall, possibly with the view of carrying out, to some extent, at least, the original proposals of that great architect, Sir Charles Barry, in reference to the matter. Although he (Mr. Shaw-Lefevre) felt that he possessed but few qualifications for the post of Ædile of this great city, he yielded to no one in the desire to see the metropolis worthily adorned with fine works of architecture.

Sir Philip Cunliffe Owen, in proposing the toast of "Art, Science, and Literature," coupled with the names of Mr. Street, R.A., Mr. G. J. Symons, F.R.S., and Professor C. T. Newton, C.B., referred to the strides which had been taken by this country of late years in the matter of its industrial art productions—a result which he attributed very much to the teaching of museums and schools of art. He paid a warm tribute to Mr. Street for the interest which that gentleman had always manifested in the work that was being done by the South Kensington authorities, and, after referring to the progress of scientific discovery, spoke of the untiring labours of Professor Newton in the field of the literature of antique art. The South Kensington authorities were continually indebted to Professor Newton and his able coadjutors at the British Museum for valuable advice.

Mr. Street, Mr. Symons, and Professor Newton severally responded.

The toast of "The Royal Institute of British Architects, and success to the Conference," was proposed by Mr. M'Lachlan, President of the Edinburgh Architectural Society, who congratulated the Institute on its increasing prosperity. To the Institute the provincial societies looked for guidance in all matters calculated to maintain the honour and dignity and the best interests of the profession. With the toast was coupled the name of Mr. Charles Barry, past President.

Mr. Barry, in responding, referred to the probability that the next Conference of Architects would be held in 1884, which year would be the jubilee of the Institute. The seven gentlemen who met nearly fifty years ago to found the Institute probably never anticipated that the society would attain to its present growth and influence. With regard to the Conference, great thanks were due to his colleagues for the arrangements that they had made.

Sir James McGarel Hogg, Honorary Associate of the Institute, proposed "The Health of the President," who, having briefly responded, gave the final toast, that of "The Visitors," coupled with the name of Mr. R. C. Driver, Master of the Clothworkers' Company, who, in replying, referred to the opportunities which some of the great livery companies of the City had, by rebuilding their halls, given to architects during the last few years.

[Our report of the proceedings would have been more copious had our reporter been assigned a seat less remote from the cross-table from which all but one of the speeches were delivered. As it was, he was unable to hear half that was said.]

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## THE MILAN EXHIBITION.

WE give a general view of the buildings which have been and are in course of being erected for the National Exhibition of Industry, Art, and Commerce, just now opened in Milan. The King and Queen were present, and some speeches were made. We reserve particulars for a future occasion.

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## NEW CEMETERY, HORSFORTH.

THE township of Horsforth, a populous district a few miles from Leeds, has hitherto been unprovided with a cemetery, the graveyards of the parish church and of one of the Dissenting chapels having been made to serve for the burial purposes of the population. Recently these have become overcrowded, and necessitated the Local Board taking action for the provision of a public burial-ground. A site, six acres in extent, was purchased, and has been laid out as a cemetery. Throughout the ground the paths have been formed in serpentine lines so as to avoid the formal stiffness of the usual method of straight roads, following the direction of the grave spaces. Some little waste of burying room is involved by this arrangement, but it is not great; and, as country burial-grounds are much used as places of public resort, it was thought the trifling loss was more than compensated for by the increased beauty of the general contour of the paths. The whole of the land is well planted with forest trees and shrubs of various kinds, arranged in an irregular and natural manner.

The buildings on the site comprise a lodge for the cemetery-keeper, with board-room attached, and the group of two chapels, &c., shown on the accompanying view. The cemetery is entered

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* See *Builder*, vol. xxxvii. (1879), pp. 1291-95.

from the main road, through central and side gates, having the lodge on one side, and the dead-house on the other. In connexion with the keeper's house are the usual appurtenances, and a greenhouse for the propagation and preservation of bedding-out plants. Two chapels are provided,—consecrated and unconsecrated. They are separated by a public waiting-room, and each has a mortuary chapel for the reception of coffins, a porch, and a robing-room. An endeavour has been made to so vary the plan and position of the chapels as to avoid the formality of the usual arrangement, and to impart a picturesqueness to their appearance. All the buildings are erected in local stone, the chapel buildings being lined internally with pressed brick. The woodwork is of pitch pine; and the roofs are covered with Buttermere slates. The work has been done by local contractors, with the exception of the ironwork, which was executed by the Coventry Art Metal Work Co., and the planting, which was the work of Mr. Lister Kershaw, of Brighouse. The whole, including the laying out, has been designed and superintended by Messrs. Holtom & Connon, architects, of Leeds and Dewsbury.

## THE NEW BUILDINGS, EDINBURGH UNIVERSITY.

THE new buildings for the University of Edinburgh, and of which we give a view, contain accommodation for the entire medical school. They are situated on the east side of the centre Meadow-walk, and opposite the New Royal Infirmary, and the main entrance is from Teviot-row. The south block is well advanced, and part of it (the anatomical department) has been occupied since last October. The north block, which faces Teviot-row, is ready for the roof. The buildings, with the exception of the great hall and campanile, the erection of which must be deferred for want of funds, are expected to be completed early in 1883. The architect is Mr. R. Rowand Anderson.

## MEMORIAL HALL AND SCHOOLS, DOVER.

THESE buildings have been recently completed, and satisfactorily meet the requirements of the congregation belonging to the Baptist denomination, of which the Rev. J. F. Frewin is pastor.

The site is a very peculiar one with a narrow frontage, widening out behind, and again narrowing at the back to a strip, which necessitated rather special planning. The fact also that no lights could be depended upon from either side of the buildings necessitated obtaining most of the light for the hall from the top.

The hall will seat between 400 and 500 people in the area, and provision has been made for an end and side gallery. The schools will accommodate about 300 scholars, and there are also vestries, kitchen, &c.

The front to Priory-road is faced with red brick and Bath stone dressings, and the rest with picked stocks. Attention has been paid to the ventilation and heating,—the latter being by means of a Porritt's underground stove.

The cost, including fittings, seating, &c., was about 1,950*l.*

The works have been carried out by Mr. W. Bromley, builder, of Dover; Mr. Andrew T. Taylor, of Moorgate Chambers, Finsbury-pavement, being the architect.

## SALE OF PROPERTY AT QUEEN ANNE'S GATE, WESTMINSTER.

SEVERAL valuable freehold and leasehold properties in Queen Anne's-gate, Broadway, York-street, and Queen-square-mews, Westminster, were submitted for sale last week at the Auction Mart, by Messrs. Driver & Co. The first lot offered comprised three brick-built and tiled freehold dwelling-houses and shops in York-street, all let on leases at an aggregate annual rental of 162*l.* per annum. The auctioneer observed that the position of the land and premises, occupying an area of 3,300 superficial feet, opposite to Queen Anne's Mansions, in a very improving part of Westminster, and its proximity to St. James's Park, gave it a great value, in reversion, as a building site. The property was sold for 4,000*l.* The next lot consisted of the freehold stabling and coachhouses, known as Queen-square-mews, let to General Lord Mark Kerr at 60*l.* per annum. This lot was sold for 1,440*l.*

## OBITUARY.

*Mrs. Henry Mackarness.*—With much personal sorrow we hear of the unexpected death of this lady, which occurred at Margate on the 6th inst., in the 55th year of her age. Mrs. Mackarness had been unwell, and was at the seaside in consequence; but no one anticipated a fatal result. She leaves six children to deplore her loss. The daughter of the late Mr. J. R. Planché, the well-known dramatist and antiquary, Mrs. Mackarness early commenced to write, her first literary venture being a story in reply to Dickens's "Chimes." She afterwards wrote a large number of tales and novels, the most popular of the former being the well-known "Trap to Catch a Sunbeam," which has passed through some forty editions, and has been translated into many languages. "The Young Lady's Book," published by her in 1876, ought to have had a large sale. Mrs. Mackarness was the widow of the late Henry S. Mackarness, vicar of Ash, and, consequently, sister-in-law of the Bishop of Oxford and the Bishop of Argyll. She was an admirable wife and mother, and will be missed by many poor children in the neighbourhood of her residence at Clapham, to whom she gave continuous instruction at regular intervals.

## SANITARY MATTERS.

*Toxteth Park Local Board of Health.*—Mr. J. A. Hall, C.E., the engineer and surveyor to the Board, in his special general report on the progress of the district, said that the present net rateable value of the district was 97,748*l.*, being 44,736*l.* more than in the year ending March 25th, 1876. Since 1876 there were plans of twenty new streets submitted to and approved of by the Board. The total length of new roads sewered and formed since 1876 had been over three miles. The sewers were well-made brick sewers, at a total cost of about 5,000*l.* to the owners. All these sewers were provided with proper ventilators and flushing-chambers. Besides the brick sewers there had been laid about 16,716 lineal yards, or about 9½ miles of pipe-sewers or house-drains, varying in diameter from 6 in. to 18 in. During the same period of three to four years, nearly 1,000 houses had been erected and well drained. During the past year, ending on the 25th of March last, the total death-rate was only 11·4 per 1,000. The population of the district, according to the census taken on April 4th last, was, males, 4,133; females, 6,238; total, 10,371. The total number of inhabited houses, according to the same return, was 1,688; uninhabited, 303; building, 112; total, 2,106.

## LARGE SALE OF FREEHOLD GROUND-RENTS AND OTHER PROPERTY AT WALWORTH.

A VERY extensive sale of freehold ground-rents and other freehold property, in Walworth, took place at the Auction Mart last week, the sale occupying two days. The sale comprised the ground-rents on 187 houses, shops, and other premises situated in several streets on the Walworth-common Estate, the annual value of the ground-rents amounting to 1,200*l.* per annum, the houses being estimated to be of the annual value of 7,000*l.* The sale also included thirty-five freehold houses in the same locality, let at rents amounting together to about 650*l.* per annum, with reversion in seventeen years to the rack rentals, of the estimated annual value of 1,500*l.* The first day's sale, comprising sixty-nine lots, consisted altogether of ground-rents on property held for unexpired terms of from seventy-seven to eighty-seven years. The whole of the several lots were eagerly bought up, realising prices varying from 200*l.* to 700*l.* each, averaging an annual return on the outlay of from 3½ to 4 per cent. until the expiration of the leases, when the purchasers become entitled to the full rack-rents.

The second day's sale comprised forty-three lots, including twenty-seven ground-rents and sixteen lots of freehold houses. The ground-rents realised similar prices to those obtained at the first day's sale. The freehold dwelling-houses were sold in lots of five houses each, the present aggregate rentals of each lot being 85*l.* per annum, until the expiration of the leases, the reversion to the rack-rentals in seventeen years being estimated at 160*l.* per year. They were sold at prices varying from 1,630*l.* to 2,620*l.* each lot. The sale produced 23,530*l.*, the aggregate amount of the two days' sale being 43,824*l.*

Messrs. Norton, Trist, & Watney, of Old Broad-street, were the auctioneers.

## ST. DOMINIC'S PRIORY CHURCH, HAVERSTOCK HILL.

SIR,—My attention has been drawn,—by the editor of the *Sacristy*,—to two letters upon the above subject. As the writer of the criticism complained of by Mr. Buckler, I ask your leave to make a few remarks.

As a matter of fact, the two letters contradict each other.

The Reverend Father Prior states that "the alleged facts in the said article are palpably untrue."

I presume that the sentence is to be read,—"the *facts alleged in the said articles* are palpably untrue." But truth and falsity are predicated, as, I believe, of propositions, not of facts,—which are either are or are not; so that the sentence would need to be further amended to make of it good English,—and sense. Its meaning is, however, clear enough, in spite of the obscurity of the expression, and it amounts to this,—that "the statements of the writer of the article as regards matters of fact" (as distinguished, I presume, from matters of mere taste, as to which *non est disputandum*) "are palpably untrue." This is, doubtless, in substance what the Reverend Father intended to say,—although he has not said it.

But Mr. Wallen, the district surveyor of West St. Pancras, in a letter quoted by your other correspondent on the same page, states exactly the contrary. He says virtually that the facts *are* as stated by the *Sacristy*.

The *Sacristy* says,—and this is the point of the whole critique,—"The clearstory walls have gone over, outwards, to the extent of some 3 in."

Mr. Wallen says,—"The clearstory inclines outwards on the north side,—near the apse, ¼ in. in a height of 6 ft."

As the clearstory is about 16 ft. high, ¼ in. in 6 ft. is equivalent, in the total height, to 3 in.

Nor is this agreement between the statements of the *Sacristy* and the results of Mr. Wallen's plumbing remarkable, since I had a copy of Mr. Wallen's report before me as I wrote, and it was from his very accurate data that I drew the assertion which the Reverend Father describes as "palpably untrue."

In the case of the outward deflection of the clearstory, I had only my eyes to go by. I therefore accepted Mr. Wallen's statement, which is the result of actual plumbing.

But as respects the pillars, I was able to take exact measurements with an 8-ft. straight-edge, assisted by an experienced builder. The result of my measurements gave the inward deflection of the piers in one case to be close upon 3 in. As, however, Mr. Wallen's plumbing showed only 1 in. in "the extreme case,"—of those that he tried,—I thought it best to "split the difference," and state the deflection as 2 in. I am quite ready to give Mr. Buckler his inch,—as I am very sure that the church will soon take the ell.

I am, therefore, quite content to leave the Reverend Father Prior,—who states that what the *Sacristy* says,—which is (save the inch) precisely what Mr. Buckler's letter says,—is "*palpably untrue*,"—to settle the point with Mr. Buckler.

In my opinion, the church will not be standing in ten years, unless, like the Holy House of Loretto, St. Dominic can persuade Our Lady to bear it up in air. And to warn Mr. Buckler of this danger, not only to his church, but to his professional reputation, is, in my opinion, a friendly action.

As, however, he has ventured to speak of the writer of the critique as "a secret foe," I hereby challenge him, as a gentleman, to print in your columns the letter which I wrote to him, long before this article appeared, anonymously, upon the same subject. If he does not do so, I, sir, will ask you to do so, and I will leave the public to judge, whether the tone of that letter (which I believe induced Mr. Buckler to have the church plumbed) is that of "a secret foe."

The matter is not a personal one: it is one which concerns the public safety. Let those see to it,—now,—whose duty it is. *Liberavi animam meam.*

I have recently learnt that the Cardinal Archbishop is so doubtful of the safety of the church,—which his Eminence will shortly be called upon to consecrate,—that he has directed his own surveyor to examine into its condition.

As I, sir, *most distinctly*, had nothing to do with this action of the Cardinal of Westminster, it would appear that Mr. Buckler has other "secret foes" besides A "SACRISTAN."

*Patronage of St. Joseph*, 1881.

## DESTRUCTION BY LIGHTNING.

SIR,—The accident which occurred on the 26th ult. to the Board School in Orange-street, Southwark, is another proof to me how little care is taken, even by such institutions (otherwise so well managed) as the London School Board, to protect life and property from the destructive influences of the fiery flashes from the clouds.

It is more than a century since Benjamin Franklin showed us the simple method of protection against lightning, and it may seem almost incredible that hundreds of buildings are still destroyed annually, and hundreds of lives lost by these discharges of electricity. I have just received an official letter from the Minister of Agriculture, Industry, and Commerce, of Italy, informing me that during the sixteen years from 1864 to 1879, no fewer than 1,906 lives were lost in that country through fatal accidents from lightning.

RICHARD ANDERSON.

## CLERK OF WORKS.

SIR,—I am building a large villa in North London under the direction of a City architect. The specification and conditions of contract are drawn in the usual way. The architect has inspected the building weekly from the commencement, and has expressed himself satisfied with the work. But when the building was nearly ready for the roof the employer sends a clerk of the works; and the architect writes me that the said clerk of the works will represent him during his absence. The clerk of the works has found fault with several things that the architect had previously approved of, and has also told me to do several things that are not shown or specified.

What I wish to know is, can I object to a clerk of the works being on the job at all, as nothing whatever is mentioned in the specification or conditions about one.

G. P.

*** You cannot object.

# Books.

*Formulæ for the Calculation of Railroad Excavation and Embankment, and for finding Average Haul.* By. J. B. DAVIS, C.E. New York: Gillis Brothers, 1877. London: Sampson Low & Co.

WE owe to the United States some admirable examples of what we may call graphic art applied to architecture and engineering. We know of no English work of a professional nature so well got up and illustrated as the "Contributions to the Centennial Exhibition, by John Ericssen," in which this Nestor of civil engineers gives the fruits of half a century of scientific and practical labour. And the effects produced by the ruling-machine, as handled by the artists employed by Messrs. J. A. Lowell & Co., of Boston, are quite equal to the hand-work of an excellent artist in water colours. It is only fair, then, if America sends us at times such enviable proofs of her rapid and steady progress,—a progress which it is allowable at the same time to admire and to envy, that we should be allowed a word of demur when she sends us examples of "her 'prentice-han'." In pointing, in spelling, in illustrations, and in the use of a special formula of contraction which requires translating into English in order to be understood, the book before us is open to objection. Here is a sample, taken at random:—

"We see that the approx. result for the irreg. vol. falls short 10 yds., in a true vol. of 226 cu. yds., only 1¼ of which is recovered by application of pris. cor. to the whole reg. vol., while the remaining 8¾ yds. is due to the cor. of a mere strip of vol. whose true content is not more than 26¼ cu. yds. By this it becomes evident that it is vastly more important to apply the pris. cor. to vols. bet. irreg. sections than bet. reg., the cor. in this case for reg. vol. being but 1¼ yds. in 293, whereas the cor. for the irreg. vol. is 10 cu. yds. in a true vol. of 266."

The author of the foregoing probably had some meaning, which the use of ordinary language might have expressed. So, again, when he says,—"We now propose to unfold a method of computing by formulæ the contents of a series uninterrupted by the presence of vols., however unequal in length," we plead guilty to a feeling of inability to decipher the hidden meaning of this original language. At page 143 of "Useful Rules and Tables relating to Mensuration, Engineering, Structures, and Machines," by W. J. Macquorn Rankine, will be found "Rules relating to Mensuration of Earthwork," which are at once simple and accurate. MacNeil's tables are well known, and may be regarded as a necessary part of the library of the engineer. Earthwork measurement is of two kinds,—prospective, or by way of estimate, and actual, when the work is in course of execution or completed. In the former case we think it difficult to improve on the use of MacNeil's tables, by which earthworks to the value of hundreds of millions sterling has been calculated during the last fifty years in this country. As to the latter, where there is not an agreed amount, or a lump contract, actual measurement is indispensable. If Mr. Davis has any improvement to suggest, he should at least take the trouble to do so in readable English. There are some slovenly speakers who never pronounce the whole of a word, but we never before met a writer too slovenly even to print his words according to their letters.

## VARIORUM.

*House and Home* is a cheap periodical, which seeks to popularise and disseminate hygienic and sanitary information. It is edited by Mr. John Pearce. The fourth volume just now sent to us is a great advance on its predecessors, and contains a large amount of useful information. The last number in it includes an elaborate and interesting notice of Mr. Edwin Chadwick, with a portrait.——The *Monthly Miscellany*, for May, seeks, and not unsuccessfully, to revive the interest felt in the colonnade removed from Burlington House, by a paper entitled "Some Old Stones in Battersea Park."——The fifth volume of the *Journal of Forestry* is commenced with the current part, and some alterations have been made, both in the contents and the appearance of the magazine, with the view of making the study and cultivation of trees more popular. The number, which is altogether a good one, contains a *fac-simile* of an interesting and characteristic letter on the subject of trees and peasants, written by the late Earl of Beaconsfield only a short time before his death.

# Miscellanea.

**Thames Floods.**—An important meeting of gentlemen interested in the mitigation of the damage caused by the Thames floods was held on the 9th inst. at No. 12, Great George-street, Westminster, the Right Hon. W. H. Smith, M.P., in the chair. The chairman mentioned that a few weeks since a preliminary meeting was held at his house at Henley, when a sub-committee was appointed for the purpose of investigating the subject of floods in the Thames Valley between Oxford and Teddington. That sub-committee drew up a report, which contained many suggestions relative to the mitigation of the mischief. The report of the sub-committee having been read, a discussion ensued, and some of the speakers expressed the opinion that the proposed Thames Conservancy Bill will afford powers which will enable the difficulty to be thoroughly dealt with.

**Wandsworth.**—It has been decided to erect new Sunday-schools and lecture-hall, in connexion with the East Hill Congregational Church, Wandsworth, and the Building Committee have appointed M. E. W. Mountford, architect, of Buckingham-street, Strand, to carry out the work. The new buildings will comprise vestries for minister and deacons, several class-rooms, kitchen, chapel-keeper's residence, and lecture-hall to accommodate 300 people. The estimated cost, exclusive of furniture, is about 1,800*l*. Plans were also submitted by Messrs. Serle & Son, and Mr. Julian.

**Marylebone.**—At a special meeting of the Marylebone Board of Guardians, Mr. Edmund Boulnois, the chairman, announced that the Prince of Wales had consented to open, next month, the new infirmary for Marylebone, erected by the guardians at Notting-hill from the designs of their architect, Mr. H. Saxon Snell, and a committee was appointed to make the necessary arrangements.

**Croydon.** — Endeavours are being made to obtain a charter erecting Croydon into a borough. A small minority of the inhabitants are getting up a counter petition.

**The Builders' Benevolent Institution.**—The theatrical performances on the 9th inst., at the Imperial Theatre, in aid of this important charity, were conducted most successfully, and resulted in a net addition to the funds of 100*l*. The principal characters in the pieces selected, "Nine Points of the Law" and "Old Soldiers," were sustained by Mr. Douglas Fourdrinier' Capt. Conyers D'Arcy, Mr. W. Harwood, Mr. Durham, Mrs. Conyers D'Arcy, and Miss Sinclair. The acting all round was exceedingly good.

**"The Golden Axe," St. Mary Axe.**—This house, which is situated at the corner of Bevis Marks, E.C., is one of the few timber-built structures remaining in the City of London, is about to be rebuilt from the designs of Mr. H. H. Collins. It is a very picturesque building, and it is to be hoped that some effort will be made to preserve a record of its appearance. We commend this suggestion to that useful body, the Society for Photographing Ancient Buildings, which has already done good service with regard to the vanishing relics of Old London.

**Melbourne.**—Messrs. Thomas Robinson & Son, Limited, Railway Works, Rochdale, have just learnt by telegram from Melbourne, that in addition to the three highest awards already granted them at the Exhibition there, they have been awarded, on the special recommendation of the jurors, "The Commissioners Gold Medal," for the superiority of their exhibits of steam engines and wood-cutting machinery over others of the same class.

**West of England.**—About thirty of the *employés* of Messrs. J. B. Julian & Sons, contractors, Truro, were entertained at supper on Friday evening in last week at Polwithen, Penzance, the residence of Mr. William Bolitho. A large billiard-room, and additional kitchen apartments having been recently built and completed, which are attached to the mansion-house of Polwithen, from the plans of Mr. D. Brandon, architect. Mr. Bolitho, in proposing the health of the firm, congratulated them on the very good work they had done.

**Designs of Doors, Mouldings, and Sashes.**—The trade-book recently issued by Messrs. Joseph Sandell & Co., of Commercial-road, Lambeth, contains a very large collection of mouldings of all kinds, with diagrams of doors and windows, and lists of prices. It will be found very useful by many. The firm are importers of Swedish doors, and as they speak of their stock of Swedish doors being seldom less than 20,000, it will be seen that the business done in that direction alone must be pretty extensive.

**Fire Protection.**—Last week successful trials were made at the premises of Messrs. Marshall & Snelgrove, Oxford-street, with the high-pressure fire hydrants and hose and appliances, as well as hand fire-pumps and buckets, which have been furnished by Messrs. Merryweather & Sons, of Long-acre, for the purpose of enabling a private fire-brigade, composed of several of the *employés*, to take steps on the outbreak of a fire to confine and subdue the devouring element between the discovery and the arrival of the metropolitan fire-brigade.

**Art Industrial Exhibition, Plymouth.**—The entries for this exhibition close on Monday next. Prizes to the extent of 200*l*., and one third of the profits as supplementary prizes, are offered to all classes of professional and amateur workmanship, paintings, drawings, building materials, &c.

**The Holloway Workhouse.**—We believe that, in the event of the Local Government Board sanctioning the proposal of the City guardians to give up Holloway workhouse, several adjoining poor-law unions have it in contemplation to utilise the building as a small-pox hospital.—*City Press.*

**New Synagogue.**—The Council of the United Jewish Synagogue has given authority for the erection of a permanent synagogue, in substitution of the present iron structure at St. John's-wood. The entire cost of the building is not to exceed 8,000*l*.

**A Bronze Tablet** has just been erected in the Church of St. Nicholas, at Hamburg, to the memory of Sir Gilbert Scott, from whose designs the church was built. The tablet bears a portrait in relief of the distinguished architect, with a suitable inscription.

**The Bognor Local Board** have applied to the Local Government Board for a loan for the purchase of the "Jubilee School" premises, and instructed their surveyor, Mr. H. W. Stringfellow, to prepare the necessary plans for converting the same into public offices.

## TENDERS

For the erection of new Board schools for 530 children, two residences, boundary-walls, and necessary offices, at Preston-next-Faversham, for the Preston W.D. School Board. Mr. B. Adkins, architect:—

| | |
|---|---|
| A. Kilby, London | £5,573 0 0 |
| H. B. Wilson, Canterbury | 5,399 0 0 |
| Perry & Co., London | 5,125 0 0 |
| P. Stiff, Dover | 4,987 0 0 |
| D. C. Jones & Co., Gloucester | 4,945 0 0 |
| Paramor & Son, Margate | 4,860 0 0 |
| J. Ware & Son, Faversham | 4,812 13 6 |
| Callund & Son, Rochester | 4,775 0 0 |
| T. Cornelius, Whitstable | 4,599 0 0 |
| J. Bingham, Headcorn | 4,567 0 0 |
| L. Shrubsole, Faversham | 4,540 0 0 |
| A. Matthews, Dover | 4,516 0 0 |
| C. Foad, Whitstable | 4,498 0 0 |
| W. Judges, Broughton | 4,462 10 0 |
| Naylar & Son, Rochester | 4,353 0 0 |
| J. Seagar, Borden | 4,250 0 0 |
| R. M. & H. Whiting, Ospringe* | 4,100 0 0 |
| Featherstone & Lucas, Littlebourne | 4,060 10 0 |

* Accepted, subject to the approval of the Educational Department.

For new corn-mill at Newport Pagnell, Bucks, for Mr. C. H. Whitworth. Gravel and sand and all carting done by proprietor. Messrs. Usher & Antony, architects:—

| | |
|---|---|
| Cooper, Aylesbury | £2,282 6 0 |
| Lilley, Bedford | 2,130 0 0 |
| Edey & Son, St. Neot's | 2,027 0 0 |
| George, Stony Stratford | 1,983 0 0 |
| Harrison, Wellingborough | 1,910 0 0 |
| Cosford, Northampton | 1,851 0 0 |
| Foster, Bedford (accepted) | 1,811 0 0 |
| Ireson, Northampton | 1,700 0 0 |

For new premises for the London and County Banking Company, Limited, Bedford. Messrs. Usher & Anthony, architects:—

| | |
|---|---|
| Higgs & Hill, London | £3,980 0 0 |
| Rider & Son, London | 3,648 0 0 |
| Freshwater, Bedford | 3,580 0 0 |
| Foster, Bedford | 3,111 0 0 |
| Spencer, Bedford (accepted) | 3,080 0 0 |

For erecting and completing a billiard-room, conservatory, and other works, at Lexden House, Reigate, for Mr. H. Carter. Mr. A. Bedborough, architect. Quantities supplied by Messrs. R. L. Curtis & Sons:—

| | |
|---|---|
| Holdsworth | £1,163 0 0 |
| Garrett | 999 0 0 |
| Peat | 991 15 0 |

For alterations and additions at Stourville, to be afterwards called Streak Place, in Gervis-road, on the East Cliff, Bournemouth, Hampshire, for Horace Dobell, M.D. Mr. A. Bedborough, architect. Quantities supplied by Messrs. R. L. Curtis & Sons:—

| | House. | Entrance Gateway. |
|---|---|---|
| Pike | £1,873 0 0 | £72 0 0 |
| George | 1,870 0 0 | 56 0 0 |
| Minty | 1,690 0 0 | 50 0 0 |
| Abley | 1,640 0 0 | 63 0 0 |
| Hoare Bros. & Walden | 1,546 0 0 | 65 0 0 |
| Stroud | 1,533 10 0 | 70 15 0 |
| Howell & Son | 1,520 0 0 | 75 0 0 |
| Blackford | 1,489 6 0 | 53 4 0 |

For Wesleyan Chapel, with spire, Surbiton, Surrey. Mr. Charles Bell, architect. Quantities by Mr. Henry Lovegrove:—

| | Chapel. | Spire. |
|---|---|---|
| Woodward | £5,050 0 0 | £700 0 0 |
| Green | 4,929 0 0 | 682 0 0 |
| White | 4,645 0 0 | 745 0 0 |
| Gregan | 4,625 0 0 | 520 0 0 |
| Hickinbotham | 4,385 0 0 | 685 0 0 |
| Scace | 4,398 0 0 | 678 0 0 |
| Tyerman | 4,397 0 0 | 630 0 0 |
| Belham & Co. | 4,341 0 0 | 650 0 0 |
| Allen & Sons | 4,210 0 0 | 769 0 0 |
| F. Higgs | 4,358 0 0 | 612 0 0 |
| Lucas & Son | 4,319 0 0 | 587 0 0 |

For warehouse and stabling, Brixton, for Mr. W. H. Stevens. Mr. C. V. Hunter, architect. No quantities:—

| | |
|---|---|
| Peacock | £870 0 0 |
| Rowe | 725 0 0 |
| Cooper | 715 0 0 |
| Pack Bros. | 707 0 0 |
| Mallett | 695 0 0 |
| Geo. Harris | 685 0 0 |
| Cass & Belton | 640 0 0 |
| F. Higgs (accepted) | 624 0 0 |

For converting two houses into flats, Powis-terrace, Bayswater, for the Hon. E. G. Strutt. Mr. George Sherrin, architect. No quantities:—

| | |
|---|---|
| Dousing & Son | £1,485 0 0 |
| F. Higgs | 1,231 0 0 |
| Beale | 1,192 0 0 |
| Scott | 1,169 0 0 |
| Faulkner (accepted) | 985 0 0 |

For new room at the Angell Town Institute, Brixton. Mr. J. W. Stevens, architect:—

| | |
|---|---|
| Maxwell Bros. | £289 0 0 |
| Gillard | 195 0 0 |
| Beale | 192 0 0 |
| Holliday | 137 0 0 |
| Pack Bros. | 125 0 0 |
| J. O. Richardson | 119 0 0 |

For stabling, Broadlands, Effra-road, for Mr. W. Pocock. Messrs. Searle, Son, & Hayes, architects:—

| | |
|---|---|
| Candler | £725 0 0 |
| Sawyer | 592 0 0 |
| Triggs | 563 0 0 |
| F. Higgs (accepted) | 542 0 0 |

For new shop-front, &c., at 15, Ship-street, Brighton. Mr. Arthur Loader, architect:—

| | |
|---|---|
| W. Hackman, Brighton | £256 0 0 |
| W. H. Webber, Brighton | 245 10 0 |
| J. M. Newnham, Brighton | 243 0 0 |
| G. R. Lockyer, Brighton (accepted) | 223 0 0 |

For sundry alterations at the Hanover Arms, Rye-lane, Peckham, for Messrs. Truelove Bros. Mr. J. G. Marsh, architect:—

| | |
|---|---|
| Balaam | £500 0 0 |
| E. Terry | 367 18 0 |
| Gould & Brand | 345 0 0 |

For alterations, painting, &c., at the Hercules Tavern, Leadenhall-street, for Mr. J. T. Maidwell. Mr. W. E. Williams, architect:—

| | |
|---|---|
| Eaton | £226 0 0 |
| Jackson & Todd | 185 0 0 |
| Staines & Son (accepted) | 176 10 0 |

## TO CORRESPONDENTS.

*Colour Questions.*—A number of communications on this subject have been received, and shall have consideration next week.—J. N. J. & Sons.—C. J. P.—H. G.—B. A.—U. & A.—H. L.—S. & Son.—G. S. & Co.—J. R.—R. W. S.—C. N. A.—W. W.—F. W.—B. & H.—C. J. B.—J. D. G.—S. & K.—J. G. M.—W. D.—J. & K.—A. S. C.—A Reader.—A. M.—A. L.—T. R. & Son.—W. G. L.—Messrs. C.—H. T. G.—W. S.—W. A. B.—T. W.—H. W. S.—J. H.—A. H.—T. D. C.—B. & M.—F. E. & Son.—G. W.—G. W.—H. P. & Son.—J. H. S.—Music.—M. & Co.—E. G. H.—A. M. (under consideration).—B. & G. (it will appear first convenient opportunity).—J. D. C. (next week).

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